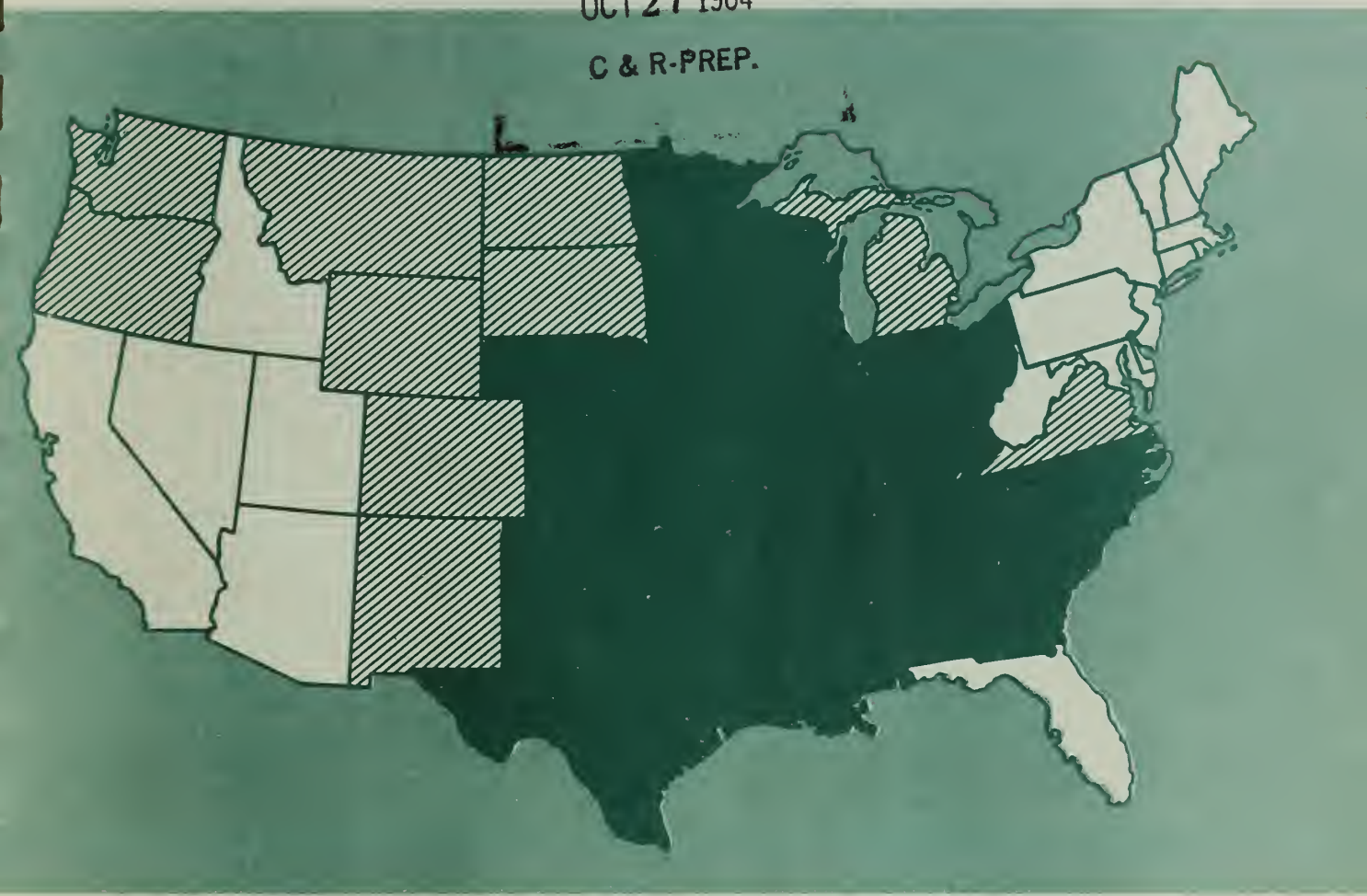
AGRICULTURAL

STATISTICIANS IN A CHANGING WORLD



NATIONAL CONFERENCE
STATISTICAL REPORTING SERVICE
U. S. DEPARTMENT OF AGRICULTURE

DENVER, COLORADO
MARCH 25-30, 1962

PROGRAM AND ARRANGEMENTS COMMITTEE:

John M. Buhl, Chairman

Stanley J. Dorick

Earl E. Houseman

Glenn D. Simpson

Richard K. Smith

FOREWORD

This is a report of the National Conference of the Statistical Reporting Service, U. S. Department of Agriculture, held at Denver, Colorado, March 25-30, 1962. The theme of the Conference was "Statisticians in a Changing World."

This was the first Conference of the Statistical Reporting Service since it became an Agency of the Department in April 1961. It was considered appropriate to include, for the most part, verbatim reports of the individual talks and conclusions and recommendations of the Work Groups. These are to be viewed as candid expressions of the respective individuals or groups and not as official statements of policy of the Statistical Reporting Service. The report was prepared as a working tool for the exclusive use of the staff of the Statistical Reporting Service and not for publication.

Harry C. Trelogan
Administrator

C O N T E N T S

SECTION I
ADDRESSES AT GENERAL SESSIONS

WELCOME TO COLORADO

Summary of Remarks by
Paul W. Swisher, Commissioner
Colorado Department of Agriculture

"It is indeed a pleasure to welcome you folks to Colorado, but a greater pleasure to know that the SRS is holding a conference of this kind, no matter where it is held." These were the opening remarks of Mr. Swisher at the first session of the conference. Commenting on the excellent weather prevailing in Denver at that time, Mr. Swisher outlined many interesting details on the topography and agriculture of Colorado.

Colorado has 54 mountain peaks over 14,000 feet in elevation. Agriculture, relatively speaking, is conducted on land from an elevation of 3,400 feet, at the point where the Arkansas River crosses into Kansas, to an elevation of 10,000 feet. From these varying elevations comes a variety of crops. In the high mountain areas, there is pasture for sheep and cattle. Mr. Swisher commented that he had run sheep on the Gunnison National Forest at an elevation of 11,000 feet. Cattle, however, are usually held to the lower elevations because of some diseases which develop in cattle at the higher elevations.

Five major rivers originate in Colorado -- Rio Grande, Colorado, South Platte, Republican, and Arkansas. It is reported that there was 84 feet of snowfall on one of the passes on the headwaters of the Rio Grande during the past winter.

Colorado is one of the leading recreational playgrounds. New ski courses are being built every year. The Loveland Basin and Arapaho Basin ski courses are within a short driving distance from Denver. There is a good game population in the State. More deer were killed in Colorado than in any other State during the hunting season last year. In the fall, particularly, many people come into the State to hunt and fish.

Turning to agriculture, Mr. Swisher cited the $639 million in farm income last year. There are more cattle feeders in Colorado than in California or Arizona primarily because of the large number of small individual operators. There are also some of the large operations. For example, in the Greeley area there are lots that feed from 35,000 to 40,000 head of cattle. Colorado is still the leading sheep feeding State in the Union. The number of sheep is slowly dropping because of the decrease in sheep population in the West. Livestock and livestock products account for about 60 percent of the total agricultural income of the State.

Crops are produced on both dry land and irrigated land. Corn production varies from zero to as much as 200 bushels per acre. Wheat and sorghum

grains are also variable. Much of this variability is dependent upon the elements, particularly in the Plains region -- winds and rain.

Agricultural reporting in Colorado is complicated. This comes about because of the variability in types of crops as well as variability in production and yields. Weld County is the 9th County in the United States in agricultural production, while one or two counties in the State -- primarily old mining counties -- have very little agriculture. Dry land and irrigated land must be reported separately.

In closing, Mr. Swisher noted the contribution being made by the reporting service and the good relationships which had been established with the Colorado State Department of Agriculture under the leadership of Bert Newell and Floyd Reed.

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AGRICULTURAL PROGRAM FOR THE 1960'S

By Willard W. Cochrane, Director
Agricultural Economics

Lady and gentlemen. I'm happy to have the opportunity to get better acquainted with you, learn more about your problems, and how those problems impinge upon me. The administration of SRS or ERS is not my function; we have good Administrators of the two Services. However, I do have very strong views about numerous things that impinge upon you and, at times, I give Harry the benefit of those views as strongly as I can. So, even though you don't see my hand in personnel operations and daily management problems, I try to be influential in SRS as far as policy is concerned. I don't have a prepared speech, but I'm prepared to make some remarks in three general areas which I think will be of interest to you.

1. The role of SRS in agriculture and in our National economy.

2. Some discussion of the organization and direction of the Department.

3. Some discussion of the farm programs which have a role to play in agriculture and which often give you more work to do.

First, the question of how I see SRS. As a result of our discussions on reorganization in the early days of this administration, it was decided to set up a Director of Agricultural Economics to operate at the Assistant Secretary level with two Services reporting to him. This is not the place to go into the ERS part of it, but I would like to talk about the SRS part. The purpose was to create a separate statistical agency -- one that had all the basic responsibilities for statistics in the Department, including research and standards, and collection of data. It was considered appropriate to bring together a basic unit of statistical collection, and research and standards, such as exists today. The two aspects -- statistics and economics -- weren't tied together because the organizational unit would probably be called Agricultural Economics or something similar. If this happened, the prestige of your service and the prestige of statistics as a discipline might suffer by not being recognized as a separate discipline. It isn't economics, though it's highly related to economics, and it should run under its own steam, so to speak.

The establishment of statistics in a separate service also suggested a need for improvement in statistical reporting work. For many years, crop and livestock reporting has been exposed to very heavy criticisms, and I am sure you folks are aware of these criticisms. Many well-qualified statisticians around the country think that your collection procedures are antiquated, and many econometricians are highly critical of the estimates that come out of crop and livestock work. Basically, these criticisms revolve around the fact that in the last 10 or 15 years, too many of the estimates were based on judgement. Now judgements may be good, and often

are. You might know in your own mind that your judgement is the best in the world. And if I know you real well, I may be willing to agree. But this is not the problem. The problem is this: Do the users of your data--the Department of Agriculture, businessmen and business operators, and people engaged in scientific inquiries -- have an adequate basis for determining the accuracy of your estimates?

The data are used to derive econometric estimates, such as demand and supply, consumption functions, production functions, and the like. Scientific inquiries are handicapped when the estimates employed are simply judgements. That is what, I think, Bert Newell was alluding to earlier. We've arrived at a time in the world's history when a number, if it's going to be used, has to have a probable error associated with it. You have to be able to tell your consumer in statistical language how good that estimate is -- whether there are 95 chances out of 100 that the true statistic will fall within a given standard error, plus or minus.

You do have a long-range program of improving estimates, for putting them on a scientific basis and for getting judgement out of your numbers. You are getting these numbers to the point where you can give an estimate with a probable error.

I would like at this point, particularly because Mr. Newell is going to be retiring soon, to acknowledge that he is one of the persons who has pushed this program of development. And, Bert, I think you are to be commended.

So, here we are ... an agency with a program. As near as I can tell, it's going very well. This doesn't mean that you don't have problems. For example, Harry has made it clear to me that there were many problems with the enumerative survey last year. Some of the numbers look very strange, indeed. In fact, they probably look stranger than the judgements that you folks have made. But, that's to be expected. This is a highly complex process. You have to experiment as you go, and it's not surprising that your first efforts may have led to some strange results. The important thing is that you don't become overly impressed by any strange results or peculiarities and say, "We'd be better off to get in our automobile, drive across the country, and make a judgement about this." You might be better off this month; but in the long run, if this is going to be a first-class statistical service, its reporting work has to be consistent with the very best in statistical technology.

You're well on the way. You have problems, and you are aware of some of them. One is the problem of efficiency in getting National statistics as compared with getting the statistics needed for State and local work. And nowhere was this driven home more emphatically than in the feed grain program where we needed data -- good data -- by county. You're going to be wrestling with all of these things. But please don't regret it. If you don't collect and report statistics with efficiency, with reliability, and with statements of that reliability, then somebody else is going to do it.

As you see, I have very strong feelings about this. I would like to look forward to the day when every statistic that comes out of this service has a probable error with it so that your consumers know exactly what they are getting.

Turning to the second area for discussion, the Department ... let me explain to you some of the things that are going on in the Department. First, I'd like to tell you a little about your Secretary of Agriculture, whom I have known quite intimately for about 7 years. First of all, he's the hardest working man in the Department of Agriculture, barring none, I believe. There are some who try to keep up with him but very few do. Next, he's a driving Administrator, who expects to have his instructions carried out, and on time. Next, he wants to see his Department and himself succeed in terms of political judgement which is what electors make. Fourth, he has a very strong feeling for the underdog. It just makes him feel good to feed hungry people.

This is the kind of a man you have: A hard worker himself, a driver, a consummate politician, and a "Man of Compassion." If you understand this, you'll understand his interests a little bit better if you ever have occasion to spend a day with him in one of your States. And if you do, you'd better be prepared to roll, and roll hard all day.

In the division of labor that's developing in the Department, the Secretary is increasing his efforts outside the Department -- on the Hill, in the White House, in the country. The Under Secretary is becoming the chief executive officer of the Department. The Under Secretary also is a very unique man. He is an outstanding lawyer and a terribly hard worker. He's a man of great compassion; but a man who, more than anybody else I know, does his homework. He probably knows better than anyone else in the Department what's going on in the Department.

Now, turning to our own area, the Director of Agricultural Economics is one of the five people at the Assistant Secretary level to whom the Services report. Increasingly, our area is serving in a staff relationship to the Department.

The picture I'm going to present now is over-simplified but has some validity in the way you might look at it. You folks are closest to the grassroots. You are the basic information-gathering unit. You gather data and you refine it to some degree, and then turn it over to ERS. ERS refines it further, perhaps putting it in terms of relationships. This is research on a somewhat day-to-day basis, but research that is oriented toward the long-run planning and development need of the Department.

Next, is a very small group that works with me -- the Staff Economists Group made up of four people. This group has the responsibility of siphoning off daily information from ERS and sometimes going back directly to SRS. We try to put the data and the ideas in a form that is useful to policy makers in making decisions. I would not suggest that we function as a planning agency of the Department. Rather, a very healthy staff

relationship is developing in our general area, with the culminating point being staff memos that are highly useful in decision making.

Let us turn now to the third point and discuss agricultural programs a bit. When this administration first came into office, it placed a good deal of emphasis on expanding demand as a means of dealing with the farm problem. Among numerous things along this direction, we expanded direct consumption programs and gave a lot of thought to expanding P.L. 480 programs. We're still working on expanding P.L. 480 and we'll continue to work on it. But increasingly it is becoming apparent that if farmers want reasonably good prices and reasonably good income, they have to control their supply. So, the Agricultural Act of 1962 proposes permanent supply management programs for wheat, feed grains, and dairy. This isn't just a little segment of agriculture. This is the heart of agriculture, when you include feed grains. I'm not going into the details of the commodity programs. You can read the details as well as I can tell them to you.

Next, an important part of the program is the development program at home. We have many -- a million and a half or two million -- farmers who don't have the resources to make it by farming. We are looking at their problem, first to measure it; second, to conceptualize it; and third, to get resources to deal with it. This may mean more education. It may mean more loan capital. It may mean better employment services. It may mean many things. And I personally suspect it means all of them. We're doing the best we can with the knowledge and the cash we have to work with to grapple with this problem.

There's one other area that we're working in -- land use. We see land use related to these short run commodity programs, because we believe that if we could move some reasonably productive land into more extensive uses -- including trees, grass, and recreation -- this would ease the immediate and long-run adjustment programs. So we're working in that area. Here too, we run into difficulties. Extensification is always difficult, because extensification basically means fewer resources employed in an area and almost certainly fewer people employed. This has implications to local institutions and arrangements.

Since I had not met you folks before, my discussion has been intended to give you some insight that would be helpful and useful in the operation of the Department in which you're working.

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TO ACQUIRE AND DIFFUSE INFORMATION

By Harry C. Trelogan, Administrator
Statistical Reporting Service

Every participant in this conference shares an interesting and unique responsibility. It stems from the Organic Act of the U. S. Department of Agriculture which states "There shall be at the seat of Government a Department of Agriculture the general design and duties of which shall be to acquire and diffuse among the people of the United States useful information on subjects connected with agriculture, in the most general and comprehensive sense of that word, ***." Specifically relating to our responsibility, one of the originally prescribed functions of the Commissioner of Agriculture was to "acquire and preserve all information concerning agriculture which he can obtain by *** /among other things/ *** the collection of statistics, ***." One hundred years ago the obligation was given to the Department of Agriculture; one year ago it was delegated to the Statistical Reporting Service.

We share the obligation to acquire and diffuse information in the most elementary sense because statistics on agricultural supplies, production and prices may be regarded as descriptive research in its purest form. The quantitative data that we provide are often referred to as the facts upon which economic, business, and policy analyses rest.

Facts in this case, statistical facts, cannot be regarded as exact. They are estimates and estimates introduce probabilities. A degree of uncertainty is always present, regardless of the methods used for data collection and processing. The statisticians endeavor to increase the accuracy and decrease the uncertainty.

Data collection and handling is a job for specialists. The job requires specialized training, education, experience, equipment and know-how to be done most efficiently. It presents unique problems for resolution quite distinct from the ultimate use or uses of the data. It benefits from leadership devoted to these services and problems. The establishment of the Statistical Reporting Service represents a recognition of these points.

Each participant in this conference holds supervisory responsibility, management responsibility, and leadership responsibility and consequently has a significant stake in what transpires at this meeting. The positions you occupy imply not only custodial responsibilities for people and resources but also responsibilities for creativity, for innovations, for decision making in reaching defined ends.

Here you will be helping to hammer out and shape decisions that have to be made for us to abide by. At home each of us has to make decisions. This conference has been arranged to permit the give and take intended to better equip us to carry out these responsibilities. No one here has any right to

regard himself simply as an observer. Everyone is expected to be an active participant. No one has a license to refer to what "they did here." He must cast his observations in terms of what "we do here."

As with all people in an organized, civilized society there are bounds and parameters within which we exercise our discretionary powers. It is my purpose to give you the benefit of my observations with respect to them. These observations are projected to inform you, but quite as much for you to react to by correcting, amending, translating and supplementing them in subsequent discussions. This is your right and your duty. In this crucible of discussion the matter for decision-making is being mixed. None of you is classed as inert matter in the mixture, all of you are active ingredients in position to make your influence felt. My contribution is to start the reaction, provoke the discussion. I ask that your response be fashioned constructively so that it can be considered seriously.

As we assume the task of interpreting the charge to assemble and diffuse agricultural information through the media of statistics, we do not start from scratch. We have the advantage of the accepted interpretations of many predecessors, of interpretations that have been distilled from extensive cooking and have stood the test of long-time development and practice. We also have the challenge of reshaping our services to meet the needs of a different and dynamic agriculture in a rapidly growing economy. We must engage in reinterpretation recognizing that we start from an established base that can be modified, but not discarded, and that all transitions have to be projected on smooth curves.

Our service might be likened to the electrical wiring in a building. When it is introduced in an established structure it represents a distinct improvement casting light where no light existed before, and more adequate light where some light was previously available. Once its advantages become known it is taken for granted as an essential feature of a house. At time of installation, the electrical wiring system is considered adequate for current needs and for some time to come. New fixtures are installed and new electrical appliances acquired without unduly overloading the system.

As the family grows and additions are built on to the house, more circuits are installed to supply the power and light. Before long unanticipated uses for electricity arise -- who ever thought of television or air conditioning when the old house was built? The family must have these things which may start out as status symbols, but gradually assume a position of usefulness generally accepted among the essential standards of living within the mores of the community. Haywire methods of bolstering the wiring system to carry the added loads will do for a while. Eventually the accumulated overload causes irritating breakdowns -- fuses are replaced more frequently, followed by truly dangerous conditions. To replace the old light fixtures with new shiny equipment or the noisy switches with silent ones may brighten up the house and make it more presentable or saleable, but doesn't solve the underlying problems. The unseen hazards can't be glossed over; a little fire may occur one day and the fire warden issues a warning. A complete renovation of the wiring system is necessary even though it is costly.

It is expensive to be sure, but the occasion for renovation becomes a time of opportunity for installing substantial lasting improvement. Additional, better located wall plugs can eliminate the unsightly, dangerous extra extension cords strewn about the house. Special circuits can be brought into the house to handle heavy-load equipment -- the stove you now have and the air conditioning unit you hope to get someday and perhaps some electrical appliances you don't even know about yet. It is far less expensive to put the wiring in now than at some future time. But, of course, you can't be sure of all your needs -- some of the wiring has to be located on a judgement basis, especially that in anticipation of future developments.

At this juncture we are in the throes of examining and renovating our system. The analogy has some severe limitations. The structure the wiring is intended to serve is changing to a degree hardly conceivable in a house. We do not have the opportunity of moving out for awhile to permit us to dismantle the old system and start over with a new one. We will probably have to deal with each circuit more or less independently always bearing in mind its relationship to the others. And we can't even discontinue service on a single circuit temporarily until a new one is installed.

An appropriate question at this juncture involves where we are now. It is important that we examine the present system together, at least in broad outlines, because I have observed widely varying concepts, descriptions and understandings even among those within the Statistical Reporting Service. Each staff member seems to be greatly influenced by his own particular work and the vantage point that he occupies. Individual observations seem to be circumscribed and distorted. Together we should endeavor to acquire a broad, valid, and reasonably uniform perspective. This is essential if we are to engage in group effort to achieve improvement. Work Group A will devote most direct attention to this, but none of us can afford to neglect it.

Briefly stated, the Statistical Reporting Service functions as the primary data collecting agency for agriculture. A major objective is to provide current quantitative information accompanied by significant historic data to facilitate comparisons. The purpose is to enable farmers, agri-businessmen, legislators, and policy makers to make more intelligent decisions. They are multipurpose data. They cannot be tailored to the need of any one group of users.

To serve the whole spectrum of users, the information must be accurate, reliable, complete, and timely. Over a period of many years the data collection program of SRS has been expanded to cover more items and to provide greater detail on established items.

The present program may be thought of as an annual cycle of estimates. For crops, the cycle begins each year with intentions to plant, followed by crop acreages and yield forecasts during the growing season, and ends with harvested acres, production and final utilization of the crop. A wide range of other estimates is made throughout the year including livestock inventories, animals on feed, output of livestock products, stocks on hand, prices paid and received by farmers, farm labor and dairy statistics. These

estimates are released through the medium of about 700 reports per year of which about 335 are issued by the Crop Reporting Board from Washington. Of these reports, 34 include highly speculative information and are released from the Board's lock-up as prescribed by law. Table I shows the number of regularly scheduled releases from Washington issued monthly or at less frequent intervals. Table II indicates the distribution of these reports by broad classes of subject matter and months of issue.

TABLE I

Reports Released from Washington
Monthly, or at Less Frequent Intervals

Frequency	Number of Reports
Monthly 1/	20
Quarterly 2/	5
Semi-annually	8
Annually	65

1/ Includes one report published seven times each year.
2/ Includes one report published three times each year.

TABLE II

Crop, Livestock, Livestock Products, and Price Reports Issued
Monthly or Less Frequent Intervals by the Crop
Reporting Board, by Month of Issue

Month	Type of Report			Total
	Crops	Livestock and Livestock Products	Prices	
	Number of Reports			
January	12	14	3	29
February	6	17	3	26
March	10	17	2	29
April	13	16	2	31
May	12	11	2	25
June	11	12	5	28
July	12	15	3	30
August	18	12	2	32
September	11	12	2	25
October	14	13	2	29
November	7	12	2	21
December	16	12	2	30
Total	142	163	30	335

In addition to the reports in Table II, weekly reports on broilers are released in the more important producing States and weekly "Crop and Weather" reports are issued on the State level during the principal growing season. Similarly, the Chicago Dairy Office issues various releases on dairy products weekly as well as monthly on a regular schedule.

When the weekly reports and the reports issued by the Chicago Dairy Office and Western Livestock Office are included in the count (but not individual State reports), the number of reports issued in 1960 was 706. Table III gives a breakdown of these reports by commodity groups.

TABLE III

Number of Reports Issued During Calendar Year 1961
by Crop Reporting Board by Commodity Groups

Type of Reports	Number of Reports
Cotton Production	7
Crop Production, including prospective plantings, crop value, annual summaries and seed crops	77
Fruit and Vegetables	83
Milk and Dairy, including 204 issued from Chicago	243
Livestock and Livestock Products, including 13 from the Western Livestock Office	72
Poultry and Eggs, including 52 broiler and 52 turkey	177
Miscellaneous Reports	47
Total	706

The basic information for these reports is, for the most part, collected, tabulated and analyzed in 43 State Statistical Offices covering all 50 States. These offices are responsible for collecting information within States through regular mail surveys, by phone, and by personal visits. Individual State estimates are prepared from these data and submitted to the Crop Reporting Board for final review. Table IV indicates work carried out in the State offices. Included are the reports prepared for the Crop Reporting Board as well as estimates and information published for industry and agriculture within the State. All States, however, do not submit all reports.

TABLE IV

Reports Submitted to the Crop Reporting Board in Washington by Field Offices

Month	Type of Report			Total
	Crops	Livestock and Livestock Products	Prices	
	Number of Reports			
January	11	31	15	57
February	7	16	6	29
March	10	11	14	35
April	20	7	17	44
May	11	7	6	24
June	19	7	16	42
July	18	15	16	49
August	17	9	7	33
September	17	7	15	39
October	16	6	12	34
November	11	8	10	29
December	13	9	17	39
Total	170	133	151	454

The work of the field offices can be shown in another way, in terms of aggregate activities or operations, as indicated in Table V.

TABLE V

Field Office Operations, 1961

Operation	Number
	(In thousands)
Reports Released	
Separate reports	9
Copies distributed or mailed	13,500
Requests for information fulfilled	
By mail	27
By phone	29
In person	10
Talks made by staff	1
Statistical reports submitted to CRB	20
Within State travel (miles)	2,650
Names on mailing lists	1,200
Publications and Agricultural Situations mailed	3,738
Questionnaires distributed	9,600
Number of returns tabulated	3,002

Mail surveys as well as enumerative surveys and objective yield measurements are conducted on a rigid time schedule. In general the data must be collected, summarized and estimates prepared by the field offices for the Crop Reporting Board's review and issuance within a period of 10 days to two weeks.

Most data for crop and livestock reporting are collected by means of questionnaires mailed to crop reporters and other lists of agriculturists. The great reliance upon mail surveys is attributable to the relatively low costs of collection, and small staff requirements to implement the simple methodology developed to convert the voluntary reports into estimates and forecasts.

Lists of crop reporters reporting for their locality or farm and special lists of merchants or handlers reporting other data are mailed questionnaires at specified times during the season, at monthly, quarterly or longer intervals depending upon the frequency of the report to be issued. The information asked for is reported in terms of acres planted or harvested, numbers of livestock, prices paid and received, expected production, yield or crop condition. Except for condition, these data are interpreted as relative to comparable figures from the previous year to obtain estimates of per farm changes or to land in farms to get estimates of per acre change, or both. Persistent bias is removed by charting. Allowances are made for changes in farm numbers or land in farms. The last available census of agriculture provides the primary base for projecting estimates forward. Check data obtained at the end of the season are used to true-up the annual estimates. When the quinquennial census of agriculture is made available, these estimates are again reviewed and revised if necessary for the five-year period since the last census so as to conform generally with the level of the new census. These represent steps taken to reduce the selectivity inherent in the mail questionnaire method, a sacrifice required to gain the advantage of low cost.

Condition reports and expected production per acre are converted into forecasts of yield monthly during the growing season. These, too, represent inexpensive but imprecise methods which require supplementation to improve their dependability.

Plans for the long-range improvement of the Crop and Livestock estimating service began in a substantial way in 1957. They were stimulated by shortcomings in the estimates and forecasts that became sufficiently evident to attract the attention of Congress. The plans were outlined in the form of four projects; namely, Project A - Structure for Providing

Project A - Structure for Providing More Reliable National, State and County Data on Farm Production

Project B - Improving Agricultural Price Statistics

Project C - Speedier Release and Distribution of Reports

Project D - Additional Data and Services

We may now turn to a review of these projects and the progress made on them.

Project A

The plan in Project A was developed from research initiated in 1954 when it became evident that the mail questionnaire approach to crop estimation no longer provided the degree of accuracy required as a result of the increasing tempo of change in agriculture. It involves enumerative surveys in selected sample areas to provide a more solid foundation of benchmarks for the estimates and forecasts based upon mail questionnaires. Two enumerative surveys were visualized each year: one in the spring to give dependable bases for data on number of farms, land in farms, acreage planted or to be planted, and livestock numbers; and one in the fall to check the extent to which the plans for production were actually carried out and to reassess the livestock inventory. In the interim months between the two enumerative surveys, objective yield surveys on important crops based on field counts and measurements were introduced to undergird the condition and probable yield data from mail questionnaires to arrive at yield forecasts during the season.

At the time of the spring enumerative survey, (which is centered on June 1), all plantings have not been completed so that the June 1 acreage estimates contain intentions to plant which may or may not materialize. Abandonments, compliance reductions, and disaster losses along with changes in intentions occur during the growing season. Supplementary surveys measure the changes in acreage. With objective yield surveys, plots in which the observations are taken are located in a sample of fields from the spring survey, so the farmers are interviewed at the time the fields are revisited to obtain estimates of acreage changes. For crops that are estimated by mail surveys, questionnaires may contain acreage questions along with crop condition and expected production.

The fall survey, centered on December 1, is the last measurement of realized productions, and completes the cycle for the season. It is taken from about one-sixth of the farms included in the spring survey.

Precision of estimates

Agricultural statistics at the national and regional levels call for the greatest precision. Transportation and communication facilities have broadened markets so that for many commercially-important commodities total supply and total demand are the important factors determining the processing, distribution and disposition of products. Many entrepreneural decisions as well as broad policy formulation require dependable national statistics, and information on a regional basis is similarly needed for commodities whose production or markets tend to be regionalized. State and local statistics are also important. The importance of State estimates is manifested by the legal requirements placed upon SRS to produce them. State and local statistics are needed by State Departments of Agriculture, agricultural colleges and others, for their use in studying State problems

and in formulating State agricultural policy. They are needed by industries servicing agriculture for such purposes as determining plant locations and sources of supply. They are also needed in the implementation of national programs such as soil bank, feed grains or aid to depressed areas.

The enumerative surveys are designed to produce national, regional, and State estimates, so the sample is allocated accordingly. The precision of the estimates declines progressively at each level. National estimates of the generally grown crops, livestock and farm numbers and land in farms are expected to have sampling errors of only one or two percent. Since agricultural production tends to adapt itself to environmental conditions of soil, climate and markets, it tends to be regionalized, so at the regional level, precision for many commodities will be only moderately less than at the national. At the State level, however, sampling errors will be on the order of five or six percent. For minor and specialty crops the precision will be considerably less.

The availability of current, high quality benchmark data provides a framework for an over-all strengthening of the SRS program. When estimates on a per farm or per acre basis are expanded by farm numbers or land in farms, an increase in the precision of the expansion factor will improve the resulting estimate by an equivalent amount. When acreage is precisely known, production estimates computed from acreage and yield are more dependable, and if the accuracy of yield forecasts is also improved, this also contributes to better forecasts of production. The quality of benchmarks such as these is reflected throughout the complex of SRS statistics.

Schedule of implementation

The rapidity with which the program under Project A becomes fully operational depends primarily upon the schedule of budgetary increments necessary to expand the program. The progress made thus far may be summarized as follows: In Fiscal 1954, an appropriation of $100,000 was made to begin new research on methods for improving the crop and livestock estimating program. A pilot enumerative survey was conducted in 10 Southern States and objective yield work on cotton and corn was started. Two years later, this appropriation was doubled and the pilot survey extended to two other Southern States and 11 North Central States. Objective corn yield surveys which were being conducted in the South were also extended into the North Central States. The study of relationships requisite to forecasting of wheat and soybean yields was also begun. Then in 1957 an increase of $250,000 was made and this money was used to place the 12 Southern States on the semi-operating level and to extend the pilot survey to one more North Central State and four Mountain States.

In Fiscal Year 1961, the appropriation for Project A was increased by $750,000 so that 15 States could be brought up to the operational level and State and regional estimates prepared for use in the State and by the Crop Reporting Board. Since Ohio contained the sample for price enumeration under Project B that had been allocated on much the same basis as the

general-purpose sample in other States and which was almost as large as that required for Project A, the price sample was enumerated during the course of the June survey, expansions made and Ohio included in the regional totals.

In Fiscal Year 1962 an additional appropriation of $500,000 for Project A permitted 5 more States to be placed on the full operational level. If the requests in the President's budget currently before the Congress are granted for Fiscal Year 1963, an additional 4 States will be placed on a full operating level and pilot operations will be conducted in the 11 Western States.

Status of Project A Projected Through June 30, 1963

I. On Full Operating Basis - June 30, 1961 (15 States)

Alabama	Louisiana
Arkansas	Mississippi
Georgia	North Carolina
Illinois	Oklahoma
Indiana	South Carolina
Iowa	Tennessee
Kansas	Texas
Kentucky	

II. To Be Extended to Full Operating Basis by June 30, 1962 (5 States)

Minnesota	Ohio
Missouri	Wisconsin
Nebraska	

III. Proposed Extension to Full Operating Basis by June 30, 1963 (4 States)

Michigan	South Dakota
North Dakota	Virginia

IV. Proposed for Pilot Basis by June 30, 1963 (11 States)

Arizona	New Mexico
California	Oregon
Colorado	Utah
Idaho	Washington
Montana	Wyoming
Nevada	

V. States Remaining to be Covered after June 30, 1963 (13 States)

Connecticut	New Jersey
Delaware	New York
Florida	Pennsylvania
Maine	Rhode Island
Maryland	Vermont
Massachusetts	West Virginia
New Hampshire	

Use of enumerative survey data in 1961

During the past season, the first experience with full operations in any State, the field enumerations were conducted during the period May 27 - June 9. The schedules were summarized by segment in the State offices and expanded to State totals for use in preparing estimates. These estimates were considered by each State statistician along with the indications from mail surveys in preparing his recommendations of estimates to the Crop Reporting Board. Listing sheets were used to transmit the data to Washington.

The data were processed in Washington on the electronic computer in order to have sampling errors computed for use by the Crop Reporting Board when reviewing the estimates prepared in the State. The machine runs also provided an independent check on the accuracy of the expansions of the data into estimates in the State offices. These computations were made in time for Board use in preparing the pig crop report released June 19 and the crop production report issued on July 11.

For the pig crop report the data on inventory numbers and sows farrowing were available and useful in confirming the estimates. The data on intentions to farrow, however, were subject to limitations because of evident inconsistencies of interpretation of the questions which need to be corrected.

For the July crop report, the data were used as an additional indication of acreage in corn, soybeans, barley, wheat, sorghum and oats in all operating States except Oklahoma where the sampling errors turned out to be higher than expected. Except for Georgia and Texas, the estimates of cotton acreages were used and were within one standard error computed in the enumerative survey. In these exceptional instances the divergences between the two methods of estimating were sufficiently great to suggest further inquiry into the sample before placing more reliance upon the new method. An estimate of numbers of farms made from the spring survey for 16 States shows a coefficient of variation of 1.5 percent. The State and regional estimates are being used in the current estimates of numbers of farms.

Future use of enumerative survey data

The commission of the Crop Reporting Board is, in essence, to obtain and review all available indications for each statistic for which it is

responsible and to arrive at a best single estimate of that statistic. This responsibility is not relieved by the implementation of Project A, but its execution may be affected.

The spring and fall enumerative surveys are expected to produce better regional and national estimates of the major crop and livestock items than are generally available from any other source. Possible exceptions are acreages of allotted crops which have been measured for compliance, and harvested production of commodities all of which enter marketing channels and which may be measured accurately off-farm. But data from these sources do not become available until late in the growing season or after harvest has been completed. These are check data rather than current estimates.

When Project A becomes fully operational the task of the Crop Reporting Board will be simplified. For the acreage and livestock reports issued in June, July and December, the Board is expected to adopt the national and regional estimates from the enumerative surveys and adjust State estimates accordingly. For the reports issued during the other months of the year, it will have available the current benchmark data from the survey and the objective yield forecasts for use in preparing the estimates.

In shifting to the new enumerative survey base, a degree of caution must be exercised. Many users of agricultural data are concerned with trends and relative changes. In the event of significant differences between the levels of the new and former bases, the Crop Reporting Board must make an orderly transition in moving to the new level so as to preserve the continuity of the historical series.

As quickly as the enumerative survey data become available for the 48 States, it is anticipated that steps will be taken to amalgamate the enumerative and mail systems for obtaining data from farms. Integration of the systems will involve the compilation of mailing lists which are probability samples of the universe of farms. Each mail survey will then be designed to supplement or complement the two enumerative surveys of Project A. The first step toward this end has been initiated in the 15 operating States by screening area segments associated with those enumerated to provide mailing lists which are probability samples of farms. Other steps may include the adaptation of State farm censuses, in those few States where annual censuses are taken, to the selection of appropriate mailing lists, and the use of the 1964 census of agriculture for the drawing of sample farms for mail surveys.

Problems encountered

The number of farms in the sample allocated to the individual States varies considerably from State to State. In the 15 operating States this number ranges from about 700 farms in Indiana, Illinois and Ohio to about 2,000 in Texas. The number per State depends, of course, upon the homogeneity of the farms within the State. Where these farms are much alike, a smaller

sample is required to produce estimates of the desired precision. Although Oklahoma has a sample of almost 1,000 farms, sampling errors were considerably higher than expected. Sampling efficiency needs to be increased. Gains in efficiency are needed, particularly in Texas, in order to reduce the size of the sample.

The sample in Oklahoma and Texas behaves very much like the samples upon which pilot surveys are based in the Mountain States. The homogeneity of the sampling units must be increased if costs are to be minimized. A project is under way in the Mountain and Western States which classifies the land area into broad categories according to the land type and land use. When this project is completed, it will be possible to achieve considerable homogeneity by stratification. Also in publicly-owned grazing lands where grazing permits are issued, estimates can be made by list sampling. Since the new sampling materials have not been completed and tested, it is impossible to predict accurately how much sampling efficiency will be increased but substantial gains are expected. Work has also been started in Texas with this end in view.

Modification

Because of efficiencies discovered through research the projected estimation of the number of farms required for the 48 States has been reduced to about 45,000 rather than to the 60 or 75,000 originally contemplated. The fall survey is expected to require about 10,000 farms. This is the only major modification in the program of surveys outlined under Project A.

Project B

The present program consists of the collection and publication of estimates on prices received by farmers and prices paid to farmers. Prices received estimates include monthly reports for 59 major commodities and monthly in season reports for 12 types of tobaccos and 6 fruits for producing States, geographic regions and for the United States. Annual, or marketing season, average prices are also computed for these commodities and for 118 additional commodities that are not priced monthly or monthly in season. An index of prices received and parity prices for most farm products are calculated monthly.

Prices paid data for the parity index include 434 commodities, divided into 6 major groups comprising the family living portion, 9 major groups comprising the production portion, together with individual series on interest on farm mortgage indebtedness secured by farm real estate, on taxes payable per acre of farm real estate and on farm wage rates. Prices for about one-third of the items are collected monthly with most others collected quarterly and a few on a semi-annual or annual basis. Prices are also collected currently for 210 additional items having an ancillary relationship to the parity index.

The basic method for collecting all of these data is the mail questionnaire. Numerous supplementary data and, for several commodities, special lists are maintained in the effort to improve the validity of the estimates. Dependence on mail questionnaires in the interest of economy detracts from the continuity and completeness of coverage, the efficiency of estimation, and in the absence of a probability sample, the possibility of determining the degree of precision. Project B contemplates the establishment of a data collection program embodying stratified probability sampling and personal enumeration of prices as a major source of primary data supplemented by mail inquiries to cover those items for which the enumerative approach is too costly.

In 1958, with funds shifted from Project A, experimentation with enumerative collection of price data was initiated in Ohio. This study indicates that a corps of 9 enumerators has been sufficient to provide substantially improved data on the major commodities for prices received items and on the more difficult of the prices paid items. It further indicates that a supplementary mail approach would for certain groups of commodities provide data for a part of the universe or for parts of the year at less cost than complete enumeration.

The study also demonstrates that the enumerative approach to price collection data can be effectively integrated with Project A. Annual benchmark farm employment data and farm wage rate data are provided from the June survey of Project A. Some needed information on market channels is likewise obtained from surveys conducted in Project A. More efficient use of the staff of enumerators is gained through the integration.

Research devoted to the price program will probably be directed first to problems associated with achieving the best quality-cost balance between enumerative and mail questionnaire approaches, commodity by commodity, and from State to State as enumeration is introduced in new States. Thereafter, research would be devoted to the following problems:

1. Criteria for determining when to add new items to the index and drop old ones.

2. Quality change -- its importance in pricing and comparison of the results of various methods of handling quality.

3. Alternative methods of handling interest and taxes in the Parity Index.

4. Use of probability sampling to select index items (as distinct from its use in pricing operations per se) in such a manner as to permit determining the sampling error of the Parity Index.

5. Alternative methods of handling durable goods in the index.

6. Improved methods of handling seasonal variation.

Project C

The currency of measurements and forecasts is an important aspect of crop and livestock estimates. The value of the data in decision making declines progressively with the lapse of time. The time interval between collection and release must be minimized if the greatest value is to be realized. Project C is designed to speed up (1) collection and transmission of data from source to points of processing, (2) computation and analysis of data in field and Washington offices, and (3) release and distribution of reports to national and local users.

The most promising possibilities at this time appear in the computation of data. New technological developments offer opportunities for accomplishing through highly mechanized equipment -- particularly electronic data computers -- far more than could be done with manual methods. The drive for greater precision and coverage of estimates, however, involves additional computations and aggravates the problem of conserving time used for data handling. Our objective is to absorb the greater load of computing work within the same tight time schedules.

With the implementation of Projects A and B and the increased emphasis in probability mail sampling in the data collection program of SRS, the job of data processing is increased tremendously. In addition to computing estimates of the many crop and livestock items, sampling errors and other parameters needed to refine and improve the sample must be computed. With the sophisticated sample designs and estimating procedures which are needed to gain sampling efficiency, go the complex computations needed to produce estimates and measures of their precision and reliability.

Because of the size of the task and of the tight schedules that must be maintained in processing data, task forces have been appointed to study this problem. The specific assignment of one task force is to plan the conduct of a feasibility study which would include a systems analysis. In conjunction with data and document flow which are being examined in detail within the framework of the present system, the problems of data transmission and processing are being examined in the light of the impact of Projects A and B when they become fully operational. Cost estimates are being prepared based upon manual, mechanical and electronic processing systems as is normally done in conducting a feasibility study, and the relative efficiencies of the alternative systems are being evaluated, as well as contributions which ADP can make that are not feasible or possible with other methods.

Although cost comparisons are important in deciding the system of data processing that is best for a specific application, they are by no means the only criteria. The time element in the data collection program of SRS injects another dimension into considerations of what constitutes the best system. The fact that SRS reports have value because they reflect the current situation places a monetary value upon timeliness, although this value may be difficult to estimate in dollars. The advent of modern statistical methods, experience in processing the pilot enumerative surveys

during the research phase of the program and experience with the survey at the operational level in the 16 States this past June, indicate the need for modern information processing systems. The June survey was processed on an IBM 650 which required about 150 hours of running time to process the data from about 12,000 farms in the 16 States. By working around the clock, it was possible to meet the deadlines of scheduled reports, but it demonstrated the need for higher capacity equipment.

Key punching data for computer input is one of the more laborious time-consuming chores. A faster system, less subject to error, is needed which will capture the data near its source and speed up the transmission from source to computer and from computer to report. These problems will be studied in connection with the applications study to see if existing equipment such as optical scanners, devices for punching paper tape, telephone transmission systems, and high speed printers can be utilized effectively in conjunction with an appropriate computer system in speeding up the release of SRS reports.

Project D

Each year, many requests for additional reports are received. Additional information is needed about agricultural production and this need generates considerable pressure for SRS to provide it. Some of these data needs have to be met even while Projects A and B are being expanded. If the modifications in the system were complete and if the general-purpose framework for data collection were operational in all States, some of the new reports could be added to the system much more easily. But all demands for new information cannot be postponed until the new system is operational in all States. Within the last year or so, SRS has undertaken several new reports among which are lambs on feed, small fruits, tomato and celery plantings, grapes, and extension of the cattle-on-feed reports. SRS has also been required to undertake research on reports for lemon production, forest products prices and horticultural specialties. Other services needing early attention include quarterly pig crop reports, expansion of market flow statistics to additional vegetables, further expansion of cattle-on-feed and prices paid for medical, dental and hospital care.

Problems to be Resolved

There are a number of problems which must be resolved if SRS is going to continue to increase its capability to serve American agriculture. Among these are: employee training and development, integration of data collecting systems, adaptation of systems to ADP, and security.

The increased importance of probability sampling makes it necessary for SRS to increase the technical competence of its professional statisticians. Mathematical statisticians are needed to develop methodology and to provide general technical guidance over the entire system of data collection. Programmers, systems analysts, and other ADP specialists are also required.

Finding and hiring people with these technical skills is not easy because of short supply. At present, the solution appears to lie in an extensive training program. This was begun in Fiscal Year 1961 by sending three men to North Carolina State College for a year's training in mathematics and advanced statistics and by enrolling twenty other statisticians in a correspondence course in sampling. This year, four men are taking the year's training and forty-five men are enrolled for the correspondence course. Within the last two years most of the top management staff, the members of our task forces and a number of operating statisticians have been sent to ADP training programs conducted by equipment manufacturers and by educational institutions. We have just finished conducting a special lecture series for the Washington professional staff. The acquisition of these technical skills is as important in the over-all tooling-up process as the assembling of a competent field force for collecting data, or the installation of equipment for processing the data. Salutary gains have already been achieved toward re-equipping the statistical staff in the course of the experience gained with the enumerative surveys thus far.

Mail surveys will continue to be the main source of data collection in the SRS program. As a matter of fact, their number and volume will probably increase as additional demands for statistics are met. It is quite likely that the mail survey of the future will have a probability basis. Experimental work is under way to develop suitable methodology for compiling mailing lists that are samples of the universe of farms and for incorporating mail and enumeration into a single survey design. But during the immediate future, the mail surveys will be continued in their present form and at their present levels.

Providing current benchmark data to strengthen the existing system of mail surveys should be regarded as the first step in improving the crop and livestock reporting. The next is to move in the direction of probability mail sampling as rapidly as is possible. To keep costs at a minimum, combinations of list and area sampling will be developed. The investigation of non-sampling errors needs to be undertaken with emphasis upon reducing response errors in data collection. Quality statistics require the control of both sampling and non-sampling errors. The need for research continues in order to investigate these and other possibilities and to do the pioneer work which is required for integrating mail and enumerative surveys and for charting a course for the future.

Automatic Data Processing is expected to create problems in SRS. Questions of centralization and decentralization are implicit in decisions of size and location of computing facilities, and organizational structure may be influenced. If SRS exploits fully the efficiencies of the mail survey based upon a probability mailing list, servicing the lists to keep them current, drawing appropriately designed samples, and addressing the schedules appear to be as much ADP jobs as the processing of the data. ADP will bring opportunities and problems not now fully recognized, so adjustments may be expected as they become necessary in the interest of increased efficiency.

The Crop Reporting Service has a long tradition of objectivity and impartiality in collecting and releasing its statistical reports. It has attempted to reflect timely and accurately the true situation with respect to American agriculture and to prevent inequities by releasing this information simultaneously to all interested parties. In keeping with this tradition and as required by law, security measures have been imposed upon the system to prevent premature disclosure of crop, livestock, and price data. Modifications of systems, whether of methodology, organization, or data handling will have to be made within the framework of security, so installations of data transmission and computing facilities must be made with this in view. The information will have to be collected and transmitted to the processing center or centers, the computations made and given to the Crop Reporting Board with no possibility of security leaks in the system. The considerations of security raise a series of problems which must be solved as methods and procedures are modified.

Whatever modifications SRS makes in its efforts to publish quality statistics, it seems clear that its dependence upon American farmers for source data will remain. The cooperation of American farmers in providing this information will become more important in the future than in the past, because the decisions which hinge upon it have increased in importance. The success or failure of farmers, industries servicing agriculture, and agricultural programs may be influenced by the accuracy of available statistics, and these statistics will continue to be rooted in the American farm.

The enumerative survey program under Project A provides a readily available vehicle for collecting other farm statistics needed specifically for particular programs. Only a limited amount of additional information can be incorporated in any one year, but over a period of years data can be obtained on a wide range of farm-related subjects. The basic area sample for the general-purpose surveys can be supplemented when needed by allocations for specific items or groups of items to increase the precision at the State level. This framework can be built upon according to the requirements of State programs. The area sample can also be used to provide probability mailing lists or to adjust existing lists for incompleteness or deteriorations through time. Should the scope of the data collection program of SRS be broadened to include economic or other data, this general-purpose sample, perhaps with slight modifications or in combination with mailed inquiries, can produce the estimates. A high degree of flexibility is thus available so that the need for information related to the farm, farm land, or the farmer can be met through a systematic program of current surveys.

We like to think of ourselves as the best equipped and qualified Agency to obtain primary data from farms and closely related industries. If we are able to retain that reputation we may look forward to more requests from other Government agencies to conduct special surveys from time to time. Our performance on two such surveys this year has been highly creditable and should prove mutually beneficial to the agencies dedicated to serving the public interest.

General Observations

In summing up, let me elaborate a few points in the hope that several observed myths or misimpressions may be obliterated or corrected.

Crop and livestock estimates can hardly be regarded as a single or monolithic system subject to renovation by adopting one or a few methodological changes that can be uniformly applied throughout. The program can probably be better characterized as a complex series of systems each of which is adapted to a particular phase or aspect of an agricultural economy that is itself undergoing drastic alterations. Improvements must be patterned to fit particular parts of an integrated statistical program and they must take into account anticipated changes in the agriculture to which the statistics relate as well as the advanced statistical methods now available.

Mail questionnaires cannot be dispensed with through the substitution of an enumerative approach. At best, enumeration bolsters and undergirds mail surveys that become more valuable as they are meshed into an integrated approach. On the basis of statistical theory and related research we are confident of gains in precision that can be derived from objective enumeration, but the benefits have yet to be demonstrated or realized in any extensive way. Any concepts or ideas of making a transition to implicit reliance on a new enumerative system of objective sampling are premature. We are, nevertheless, committed to the new system and everyone of us bears a share of the responsibility to speed up the realization of the benefits to be derived from it.

The Statistical Reporting Service has no prospects for complete conversion to ADP methods. ADP is a fact of modern statistical life and no self respecting statistician can ignore it. To say that it has no place in our Service is just as ridiculous as to say that all of our work can be converted to it. Our job is to find where it offers efficiencies and improvements and to achieve them as quickly as possible. Again, we are definitely committed to the use of ADP, including large scale computer equipment. The enumerative survey program on a Nationwide basis providing estimates of sampling error is practically inconceivable without EDP. Acquisition of the equipment offers vast opportunity beyond the enumerative survey. Everyone shares a responsibility to attain these benefits at the earliest moment.

The knowledge needed to introduce modern statistical methods and technologies into our system cannot be acquired through osmosis. Work and study are required of every staff member who expects to carry his share of the burden of achieving the progress visualized and promised for crop and livestock estimates. Work and study are also required of those who aspire to progress and prosper within the Service.

The rights, privileges, hopes and ambitions of staff members are regarded as extremely important by the present management, but there are no rules, regulations or obligations legal, administrative or moral, written or

oral guaranteeing to any man an ensconced position in this Service regardless of his performance. Our aim shall be to create the environment and provide the opportunity for every man to achieve the professional and managerial development of which he is capable and also for him to realize rewards commensurate with his contributions and qualifications. We aim to do our utmost to enhance the value, importance and dignity of the Service as a whole including all of the individuals within it.

It is not necessary for each individual to become thoroughly proficient in every aspect of the work conducted by the Service. We live in an age of specialization and provision is made for it within our Service. The fruits of specialized production can be reaped only if the talents of the specialists are effectively utilized. This calls for the patience, sympathetic understanding, and close communications that are essential among men working together in group effort. In the complex program in which each of us has a part, there is little place for the lone wolf or for the completely independent unit. The crop estimator needs the help of the mathematical statistician; the Washington Branch Chief is dependent upon the State Statistician; the State Statistician must cooperate with State officials. These relationships are encountered countless times throughout our Service, consisting of three interdependent Divisions. They all incur reciprocal considerations on the part of the individuals involved if our potentials are to be reached.

Some government management courses include a lesson that an administrator is in some respects the slave of his staff; that he must be prepared to accede to their wishes in large measure; that he may rue the day he chooses to do otherwise. The courses also point out, however, that he cannot shirk responsibilities for decisive leadership, for adhering to policies established by higher authority, for exercising his best judgement, for maintaining high standards of performance, and for abiding by ethical principles consistent with the public trust he holds.

Although I have stressed the fact that our Agency is committed to several major policies intended to improve the efficiency, the accuracy, the coverage and timeliness of our services, nothing I have said should be construed to mean that our course is fully charted. Numerous decisions have yet to be made or amended so the time is opportune to present criticisms or alternatives. We expect to fulfill our commitments, even though we are not sure precisely how. Consequently we ardently seek good ideas, and this conference is a place to present your ideas for consideration by your contemporaries. I urge you to take full advantage of work group discussions to project ideas you believe have merit and to explain why you so believe. This conference is a major step toward improving these communications.

If I may be permitted a personal remark in closing let me say: I count myself fortunate to have become associated with a crew of highly qualified people engaged in a very worthwhile activity and committed to a progressive program of improvement. My hope is that I may contribute in some measure to the achievement of your goals.

* * * *

OUTLOOK FOR DATA NEEDS FOR RESEARCH

By Nathan M. Koffsky, Administrator
Economic Research Service

Even though the economists are in one service and the statisticians in another, both are interdependent and one could not exist without the other. Although Crop Estimates really predates the Department, the decision was made some 40 years ago that it was not enough just to provide estimates of crop and livestock production, but that the farmer really needed to know what these estimates meant in terms of the markets ahead, the prices, and the incomes. This was the beginning of our outlook service and ushered in a period of rapid growth in economic research.

Additionally, at the time the two services were organized a year ago, the central idea was that the Statistical Reporting Service would be the central data-collecting instrument, responsive to the needs of the Economic Research Service and providing statistics of a known quality.

I will briefly describe the organization and functions of ERS so that you will be better able to appraise the directions we are going and the kind of our data needs ahead. ERS is divided into two groupings -- one for agricultural economics, which covers domestic economic analysis, and the other covering foreign economics.

Under the domestic economic group, the Farm Economics Division is concerned with the resources of agriculture. These are the land, water, labor, machinery and, in fact, all of the factors that are involved in farm production. Here we study how farmers can adjust their operations to changing market conditions and changing farm programs. As we look ahead, there are three areas which we will be emphasizing. First, there are the problems associated with land and water. We face a surplus of land for some time to come. On the other hand, there are in some areas of the country shortages of water and these diverse trends are likely to get worse rather than better. The President sent to Congress a special message on natural resources which is concerned with developing the means for a more sensible use of land and water. This will have to get into the regional aspects of the problems. Another research area involves the efficiency of farm size. We have begun some research on what the levels of efficiency are for different sizes and organizations of farms. Here the whole question is raised of the future organization of agriculture and particularly the future of the family farm. Finally, in this Division we have established a Branch which deals with the problems of rural poverty -- the Rural Development Branch. Here the questions are not concerned only with agriculture but rather the whole process of economic development involving a bringing together of all the resources -- farm and non-farm -- which will promote economic growth in depressed rural areas.

The Marketing Economics Division is concerned with the marketing channels for farm products and the efficiency with which the marketing agencies are performing. In addition, there is research on market potentials for new products and new uses, and market development for farm products generally. The latter can mean such things as the research accompanying the pilot food stamp program and public distribution programs as well as various promotional programs carried on by industry. Here in the Marketing Economics Division, there is a close relationship with the work that Miss Meyers is doing in the Special Surveys Branch. The points of emphasis over the next few years relate generally to improving the position of the farmer in the market, including such aspects as the development and appraisal of effective marketing information systems and the economics of grade and product quality.

The Economic and Statistical Analysis Division is one where the ties of SRS with ERS are the strongest. Here is centered the commodity outlook work which, of course, rests entirely on the agricultural estimating program. We find here the need to make substantial improvements because of changing conditions in technology and in demand. There is a new Branch in this Division -- the Outlook and Projections Branch -- which is charged with the responsibility for an annual projection of the state of agriculture for the 5- and 10-year periods ahead. This will go beyond the type of projections we have done in the past which have been limited more or less to projections of supply and demand of farm products. It will be concerned as well with developing a master framework of what these projections of supply and demand mean to the organization of agriculture, to land values, to incomes of farm people, and the migration of farm people from farms. We hope to be able to fit this kind of analysis into our regular outlook work. The Farm Income Branch, which makes the estimates of farm income and farm production costs, would not be able to exist ten minutes without the basic data supplied by Statistical Reporting Service. Our comprehensive system of farm income estimates is built around agriculture as a whole and per farm and per capita estimates. In the last five to ten years these average figures have come to have less and less meaning and it is clear that there are divergent trends among large commercial farms, smaller commercial farms, and farms that do not fit the commercial category. Finally, for this Division we should note a cooperative venture with the Bureau of Labor Statistics and the Council of Economic Advisers on assessing the role of agriculture in economic growth in this country. This means the development of detailed input-output tables and the use of the highest order of automatic data processing. So here we will be depending not only on the detailed data collected by SRS but the data processing facilities which you are planning to install.

Turning now to foreign agriculture, the Regional Analysis Division is responsible for a worldwide system of economic intelligence, country by country, of supply, consumption, export and import requirements, not only for the current period but the prospects for the five or ten years ahead. Last year, for the first time, this Division published the World Food Budget which puts together the requirements and the potential production for the world. This is the kind of information we need whether we are

appraising the possibilities for new commercial markets abroad or the need for programs such as Food for Peace.

The Development and Trade Analysis Division in the foreign area is the youngest and the smallest. This Division is concerned with research in depth on world trade analysis, the balance of payments, the role of agriculture in developing countries, and the impact of our programs such as Food for Peace on the countries which are receiving them. Here too, the immediate problem of the relation of the United States to the European Common Market is being studied.

You can see from this brief review that ERS has tremendous data needs and that they do range over the whole spectrum of economic research. We get data from a large number of sources, but the SRS is the heart of the statistical system with which we deal.

Last December, Administrator Trelogan invited me to give a paper in New York at the joint meeting of the American Farm Economic Association and the American Statistical Association. I started out this way:

> "It is generally accepted that the statistical system for U. S. agriculture is the best in the world. And for that matter probably better than for any other major sector of the economy. Yet, there is a growing inadequacy in the ability of that system to keep up with the rapid changes that are occurring in the structure of our agriculture and in the social order of our farm people."

Why did I say that? First, we are in a period -- in this post-war period-- where the situation is appreciably different. We note that before the war productivity in agriculture was proceeding at half the rate as in industry. Since the war, productivity in agriculture has been proceeding twice as fast as in industry and four times as fast as it was in agriculture before the war, so that what is happening today in one year is the equivalent of what happened in a 4- or 5-year period before the war. This raises a real question as to whether a census which provides a benchmark every five years is really adequate to keep our statistical system up to date. There is no question that technology and change is accelerated. If we look back over the 100 years during which the Department has existed, in 1860 one farm worker provided for 4 1/2 people; in 1950 for 14 1/2 people, a gain of 10; and in 1960 for 26 1/2 people, a gain of 12 in just 10 years. In a real sense, if we consider all of the technological advances of the last 100 years, more than half has occurred in the last 10 years. This acceleration shows up in the reduction in number of farms. Between 1939 and 1944 the number of farms declined 4 percent; between 1944 and 1949, 8 percent; between 1949 and 1954, 11 percent; and in the last 5-year period which ended in 1959, the reduction was 18 percent, even after allowing for the change in definition of the farm. We see this acceleration in your figures on crop output per acre. Between 1940 and 1950, crop output per acre increased 10 percent; between 1950 and 1960, 35 percent. What I am trying

to say is that I see no reason why this acceleration should lessen. Rather, it is likely to move even more rapidly in the years ahead. It is a difficult task for our statistical system to keep up with this kind of change and what worked in more leisurely times cannot work as well now.

There is an associated problem. The crop reporting system has built up a tremendous schedule of reports, but somewhere in that system we do need to think about allowing for flexibility to make fast surveys to provide answers to a particular problem. There are, of course, the problems of how you budget for such additional special needs.

Further, there is a real need for as accurate measures of crops and livestock as it is possible to get. We have talked about the rapid expansion of our capacity to produce, but at the same time we have had a slowing down on the demand side. Domestically, per capita consumption of food does not change much and growth in demand is limited largely by population growth. Dr. Cochrane indicated the difficulties involved in expanding the foreign outlets. One of the end products of accelerating ability to produce and slowing demand is that prices received by farmers are getting to be more and more sensitive to small changes in supply. Whereas before the war a 1 percent increase in production generally reduced prices 1 1/2 to 2 percent, in the post-war period, a 1 percent increase in production reduces prices 3 to 6 percent. This places an increasing responsibility on you for improving the accuracy of your estimates. A systematic 1 percent error over-all could have a potential for affecting farm income as much as a billion dollars.

I would call attention to Table 5 in The Agricultural Program for the 60's which shows average net income of farm operator families by economic classes of farms. If we look at those farms in commercial agriculture -- which for the moment I will define as farms selling $5,000 or more -- there are about 1.4 million of them and they produce about 87 percent of all the products sold. You will note also that they get their incomes largely from the farm. They do enjoy levels of living not unlike the non-farm person, but here the main questions are whether they are receiving returns commensurate to their investment and their labor comparable to those received in the non-farm economy. This group is affected mostly by government programs for price and income stabilization. If we move on to the other group -- the farms selling less than $5,000 -- there are 2.3 million of them and they get their income mostly from non-farm sources -- about $5 of cash income from off the farm compared with $1 of cash income from the farm. This group has incomes roughly half that of the commercial farm family. It is quite obvious that different kinds of programs are needed for these two groups, and that different kinds of data are also need. For the non-commercial group, we need data on resources in agriculture, including the human resources as well as information on farm production. We need to know about age, income, education, levels of living, skills, training needs, etc. We are looking for some means for getting this kind of information on a regular basis. One of the significant problems of the outlook is that 80 to 90 percent of our rural youth will not be able to find jobs in agriculture of the type which will provide satisfactory living.

Finally, it is clear that the needs of ERS now and in the future go substantially beyond your present capacity. We note that the improvements that you are bringing to your program now started some eight years ago and are not yet fully realized. There is a long lead time involved and I appreciate this opportunity to bring before you the needs of ERS at this important conference.

* * * *

A VIEW OF THE LONG-RANGE PROGRAM

By Paul F. Krueger, Assistant Chief
Office of Statistical Standards
Bureau of the Budget

Taking my cue from the central theme of this conference -- Statisticians in a Changing World -- a theme which I think is extremely well chosen, I would like to talk first about the world -- that is, the entire world of statistics. I will say something first about "Why Federal Statistics?" and the "Federal Statistical Program." Then I will talk about some comprehensive measures of economic activity -- measures commonly referred to as national economic accounts. In the context of this discussion, of the entire statistical program, I will close with what I hope will be some helpful observations about the area in which you are most interested; namely, agricultural statistics.

Why Federal Statistics?

The obligation of the Federal Government to produce statistics has two aspects. The first is the necessity for Government itself to have a sound factual basis for determining public policy and administering programs. The second is the responsibility of Government to provide its citizens with certain basic facts -- with the informational tools they require to make our free society function successfully.

There is considerable overlap between the kinds of information used for these purposes. Most of the data needed for the first purpose is also useful for the second. Much of it can be collected only by the Federal Government if it is to be properly integrated to provide a comprehensive and balanced description of the functioning of the United States economy as a whole.

It is not my intention to say more than this to justify a Federal statistics program which, although the best in the world, still needs major improvements in content, in methods used, in statistical talents available and, particularly, in orientation to analytical purposes within and outside Government.

The Organization Which Produces Federal Statistics

The Federal organization for producing statistics is generally characterized as "decentralized" and responsibility for statistical activities is divided among agencies according to their subject matter fields.

It may be described in general terms by grouping agencies somewhat arbitrarily into four broad categories according to their principal statistical activities and responsibilities. First, a central coordinating

agency to prevent duplication, achieve balance, and develop procedures for an integrated system of governmental statistics. Second, general-purpose statistical agencies, whose primary function is the collection, compilation and publication of statistics in specific fields for general use. Third, analytical and research agencies, which use statistics collected by other agencies for interpretive purposes, including preparation of composite measures. Fourth, administrative and regulatory agencies, which collect statistics primarily as a by-product of their administrative and operating responsibilities.

The decentralized character of Federal statistical responsibilities is a source of strength and efficiency for many purposes, but a possible source of weakness for some purposes.

Among the general-purpose statistical agencies, the second of the categories just described, I would list SRS. This group also includes the Bureau of the Census, the Bureau of Labor Statistics, and the National Health Statistics Center in the Department of Health, Education and Welfare. These agencies account for a large proportion of statistics produced for general use -- in fact, more than two-thirds of the current statistics program. Their size and specialization are an advantage in the development of skills and scientific techniques in the collection, processing, and publication of statistics. Their orientation is that of professional producers of valid statistical measurements. They gain also because, while large enough to benefit from economies of scale, they are specialized to a considerable extent in the areas of responsibility of their Departments -- Commerce, Labor, Agriculture, and Health, Education and Welfare. Their programs, however, must also be responsive to the needs of users of statistics outside their own departments, including the analytical and research agencies such as the Council of Economic Advisers, Office of Business Economics, Board of Governors of the Federal Reserve System, Economic Research Service of the Department of Agriculture, and many others in and outside government.

A great deal of information is obtained by administrative and regulatory agencies as a by-product of their operating responsibilities. The Internal Revenue Service publication, Statistics of Income, includes data by industry and size, on profits, interests, rents, other income and various cost elements for corporate and noncorporate business. Of necessity these data are available only after some considerable passage of time. The Social Security Administration is a source of information on wages and salaries collected in connection with Social Security taxes and, as a result of the wide coverage of the program, can provide a basic register of firms for sampling frames in designing statistical inquiries. The various regulatory agencies and commissions such as Federal Trade, Interstate Commerce, Federal Communications, and Securities and Exchange, to mention only a few, contribute useful information for general purposes as well as for their special operating needs. As you well know, this group also includes several parts of the Department of Agriculture which perform regulatory functions such as in the packers and stockyards area or which administer programs such as crop control, forest lands, and

credit. Sometimes the special skills of the regulatory agencies are utilized to obtain particular types of general-purpose statistics for use of the Government as a whole without specific reference to regulatory needs. A possible weakness is that the subject matter, the form of presentation, or the timing best suited to an agency's administrative needs is not always the best for other purposes. Some adaptation of administrative activities and procedures may be necessary to achieve satisfactory adjustment to various more general and broader uses. This may entail some inconvenience and incremental cost over the purely administrative needs of the specific agency. A broad view of what is in the best interest of the public and the Government as a whole must therefore be provided by an agency familiar with the needs of all parts of the Government.

In order to take advantage of the strength of this decentralization and minimize the possible weaknesses, central coordination and planning is imperative. This is the principal function of the Office of Statistical Standards in the Bureau of the Budget. Performance of this function requires statistical programming -- that is, the identification of statistical needs and deficiencies. Such programming requires decisions as to what statistics are necessary, what priorities are involved, from what source the data should be obtained, how and by what Federal agency the data should be gathered. In addition, there must be an assessment of the reporting burden on respondents and provision made in a budget request to Congress to carry out the program. Finally, approval by the Congress is necessary.

In addition to the facts just mentioned, the intelligent use of information requires the development of definitive standards of classification. Use of such standard classifications and definitions by all agencies is essential to achieve comparability between statistical series. These classifications are usually developed through interagency consultation under Bureau of the Budget direction. Outstanding examples are the Standard Industrial Classification (SIC) and the Standard Metropolitan Statistical Areas (SMSA's).

The relationships between statistical activities of the United States Government and those of international organizations include the development of international standards of classification, participation in conferences and working sessions of international agencies, preparation of position papers and instructions to delegations concerning international statistical matters, and supplying U.S. data for inclusion in publications of various organizations in the United Nations framework.

The relations between Federal and State statistical programs also must be considered. Statistical programs of State vary widely in scope and are generally independent of the Federal Government. In some areas, however, cooperative programs have been worked out for data collection. These arrangements are particularly effective where there are joint interests in the administration of programs -- unemployment insurance, for example -- when States compile statistics in accordance with mutually

agreed upon standards to meet both Federal and State needs. Agricultural statistics is one area in which fairly formal arrangements for coordinated Federal-State programs have been worked out. Vital statistics is another. In the case of certain activities subject to regulation, a system of reports has been developed to meet the needs of both Federal and State commissions.

There are still large statistical areas in which Federal, State or local governmental bodies obtain reports for administrative and other purposes with too little attention to how the information is compiled, its accuracy, or comparability with reports from other States with which they could be and sometimes are combined. In some instances a Federal and a State agency may ask for reports from individuals or organizations on the same subject. Much greater attention needs to be given to removing these deficiencies, to the advantage of all concerned, but the difficulties are very great.

Criteria for Guiding Statistical Developments

In coordinating the different parts of the Federal statistical program certain criteria are used. First, the scope of Federal responsibility in providing general purpose information is governed by the principle of public interest. The Federal Government should not be expected to supply at public expense detail which primarily serves individuals or small groups for private gain. Second, when data are presented for general public purposes, necessary explanations and technical notes concerning its validity and limitations should be made available. Third, where publication alone does not meet all requirements for competent specialized research by scholars or nonprofit research associations, methods should be found for making the data available for these purposes on an appropriate basis. Fourth, high priority should be given to improving major series so that they may be used in interrelated economic and social analysis. Guidance for programming economic data is provided by the principles of national economic accounting.

Emphasis on national accounts as a guide in the formulation of a statistical program stems from the increased usefulness for economic analysis of data organized in this way. Development of quantitative economic analysis requires properly integrated information on national income and product, balance of payments, input-output relationships, sector wealth estimates and flow-of-funds.

For non-economic data, integrating principles are less developed and guidance must be sought in terms of the priorities of the problems to be solved and insights as to the important facets for which information is required.

There are also numerous well recognized problems. Timeliness is a perennial one and requires continuous attention. Too much speed may lead to misinformation and major revisions. Too little speed may make the information almost worthless. In addition to knowing about the past, and

promptly about the recent past, we also want to know about the present and the future. So, the development of anticipations and intentions data.

The importance of a systematic approach to the provision of local area information on a current basis is becoming increasingly evident. Meaningful analysis and interpretation of national series requires some geographic detail even for interpretation of national scope. Where the major interests are in individual areas and such areas are numerous, the requirements are more difficult to meet. The problem of Federal vs. local government responsibility must be faced in the light of the large costs associated with providing local area data on a comprehensive basis.

Comprehensive Measures of Economic Activity

I now ask you to think a little about our system of economic statistics in the broadest sense of the term -- our system of national economic accounting.

The United States possesses today, as do most developed nations, an extensive set of statistics on its economic activity. The breadth of this information system reflects the need for precise reporting on a dynamic economy of increasing complexity. The first major advance in this system during the twentieth century took place during World War I, when our official measures of prices, employment and output were insignificantly extended. Federal responsibilities increased during the Great Depression, and the pressures to wield these new powers as rationally as possible stimulated the initiation and expansion of series on sales, inventories, production, employment, and payrolls. The proliferation of statistical series was further accelerated by the task of economic control during World War II.

Development of comprehensive economic measures required systematic ways of summarizing and organizing masses of data. Initial attempts, some made as early as World War I, included the development of the valuable indices of industrial employment, wholesale prices, and industrial production. Still more summary measures, first produced during the 1930's, rested on total employment in non-agricultural establishments, while in 1939 the central series on total labor force, employment and non-employment began. It was during the 1930's that the Office of Business Economics was firmly established, and during the 1940's that it expanded our first fully comprehensive measure of output in the form of the national income and product series. These series, and others to follow, rest on the work of individual analysts, many of them in academic and private research institutions, in developing the conceptual and structural framework of the accounts. With the presentation of a coordinate measure of prices -- namely the price deflator for the national product -- the U.S. then processed fully comprehensive summary measures for the current and real values of the product taking place in every industry and area of the Nation.

Such summary measures, however, serve only as a clear-cut starting point for analysis. Essential as it is to summarize the output of the economy, it is no less essential to understand what elements work together to produce that output. Given the responsibility laid upon the Government by the Employment Act of 1946, and the consequences that inevitably flowed from the Government's utilization of roughly one-fifth of our total product in recent years, a fixed requirement has become clear. Government policy makers must be able to rely upon data that fully reveal the interrelationships among the various types of production and the separate sectors of the economy. It is a major advantage of the national economic accounts that they do just this. Thus, the accounts dealing with national income and product permit the analyst to follow the direction of production to measure the incomes generated by that production, to know which groups of purchasers account for declines in final sales and in what proportions, and to see the consequent changes in inventory accumulation and price levels.

With the steady and widespread use of the accounts, it was not long before attention was drawn to the need to systematize our data on economic output in the context of the financing required for that output. The Flow-of-Funds Accounts, first issued in 1955 by the Board of Governors of the Federal Reserve System, measure the sources and uses of funds in each major sector, as well as the types of transactions involved. The growth of these systems of accounts still continues, and supplementation by measuring output flows among the several industries and the balance of equities and liabilities of the economy has begun. The tasks here, however, are largely ones of the future.

Recent Achievements

Since the end of World War II, continued effort by both public and private organizations has gone into improving the basic economic data upon which the national economic accounts rest. A hundred advances, however inconspicuous in themselves, have together transformed the validity of the national income accounts. These include, for example, the initiation of an Annual Survey of Manufactures, a monthly survey of retail sales, and a quarterly survey of the finances of manufacturing corporations; the speeding up by an entire year of tabulations of statistics from tax returns; additional detail on automobile prices; additional reliability in measures of construction and your own improvements in farm production data. Even if the structure of those accounts today were identical with that used in 1947, the improvement in validity, consistency and promptness of publication would be a striking achievement.

However, major advances have been made in the national economic accounts _per se_. For the national income accounts these include the establishment of a systematic accounting framework in 1947; the provision of basic data, in the 1950's, on capital stock and capital formation in manufacturing; and, in 1958, the initiation of (1) quarterly measures of the flow of real product; (2) a broad conspectus of materials on government income and

expenditure which can be compared directly with the measures for private income and expenditure; and (3) the provision of more ample data on foreign transactions. The balance of payments accounts, in addition to being expanded to provide a wide variety of information on U.S. transactions that stem from the foreign aid program, benefited from up-to-date surveys on investments made by American nationals in foreign countries.

The Flow-of-Funds Accounts, first issued officially in 1955, were steadily tested, studied, and improved in subsequent years. The necessity for change and expansion was recognized by the issuance, beginning in mid-1959, of quarterly accounts to make possible prompter reporting on the financial changes associated with production and distribution. At the same time, improvements in the structure of the accounts made them more closely comparable with the national income accounts, and therefore, more usable with them.

The measurement of the flow of industry output among the detailed sectors in manufacturing and in the other major industry categories of the economy was presented by the Bureau of Labor Statistics in 1951 in the form of an input-output matrix relating to the year 1947, following an earlier preliminary estimate for 1939. Recently the Office of Business Economics, in line with efforts to build an integrated system of accounts, began work on a smaller scale study of inter-industry purchases and sales in 1958, the most recent year for which basic Census of Manufactures data are available. This work is being done in direct connection with the estimating of national income and product. Hence, for the year under study it will be possible to make direct comparisons between (a) data on final output and the incomes associated with that output, and (b) the pattern of supporting production needed to produce that output. Work has likewise been initiated on the measurement of gross product by industry, in real terms. This will offer a valuable indicator of changing business conditions as well as a logical link between the income accounts and those for inter-industry purchases and sales. Preliminary investigation has begun, largely as a necessary by-product of the work on the national income and the Flow-of-Funds Accounts, of the balance sheets for each sector of the economy.

Directions for Improvement

Analysis of national economic accounts and of supporting data is a vital component in the work of the Council of Economic Advisers, the Federal Reserve Board, the Treasury, and the Bureau of the Budget. Such analysis forms the basis for judgement as to what today's economic situation really is; how has it changed in the recent past; what is likely to happen in the near future; and what is the long term trend of economic growth. Depending on what conclusions are reached on these matters, alternative courses of action will be indicated with respect to Federal expenditure and taxation, the procurement of goods, action in the money markets and balance of payments policy, among others. The importance of these same issues for policy making in the administration of programs of other Federal agencies is likewise significant. Needless to say, private

businessmen require similar information, for they must decide when to accumulate inventories and when to reduce them; whether to increase employment or layoffs; when to start new capital projects and when to taper down existing ones.

In providing data on the national accounts that will help make such choices as informed ones as possible, the Federal statistical system must have as its primary goals that these systems shall be integrated, comprehensive, and consistent. Let us consider each of these in turn.

Integration of Accounts

The various systems of national economic accounts were begun under separate auspices and without particular attention paid to full integration of one set of accounts with another. To some extent this occurred because of the considerable difficulties involved in initially working out each set of accounts. However, the structure of the main accounts is now well seasoned. Assiduous and competent work over the years has minimized some of the technical problems that prevented such integration earlier. Furthermore, an increasing number of these systems are being published regularly, thereby highlighting the inconsistencies among them. It is true that highly expert users can effectively combine these sets of data, though probably not with sufficient speed to settle any question on short term economic trends or choice among policies. Moreover, there is little assurance that the estimates in one system are necessarily consistent with components shown in others, nor even that identically defined components are identical in all the systems. One of the central statistical tasks of the period ahead is to move decisively toward the integration that will make the national economic accounts at once more reliable and most useful to the work of analyzing business conditions.

Comprehension of Accounts

A comprehensive system of accounts is required in any nation with sufficiently complex problems so that for the solution of these problems its more astute businessmen will seek such data, and the component government agencies will require them to discharge most intelligently the responsibilities laid upon them. Our existing national economic accounts all grow from the pattern of accounts kept for the prudent guidance of individual business operations, including the ordinary profit and loss statement, the balance sheet and the sources and uses of funds statement. The development of accounts for the Nation began most obviously with the balance of payments account and the national income and product accounts, widening to include the flow-of-funds accounts in recent years. Three specific areas of further expansion are important. These are:

(1) The flow of goods among the several producing industries of the Nation -- input-output tables, inter-industry purchases and sales or whatever other title you wish to give it.

(2) The systematic development of balance sheets to show the financial resources for each major sector of the economy. For this, the need for a Census of Wealth is clearly indicated.

(3) Measures of real product, already available for the economy as a whole, are being developed for major sectors.

The expansion of the national economic accounts, first to include the flow-of-funds, then inter-industry purchases and sales of real product by industry, and now the proposed incorporation of national balance sheets, has put an increasing burden on the underlying statistics. Every additional set of measures increased the premium on the consistency of basic economic statistics.

Consistency of Accounts

The economic analyst does not generally limit his analysis to a single aspect of the problem. Concerned with farm income, say, he will look to data on farm production and expenses; to employment that goes to produce off-farm income received by farmers; to the investment in equipment which goes to increase farm income; to the variation in non-farm incomes from which derives the strong demands for farm products. He, therefore, must have measures for each of these aspects that are substantially consistent with each other. In this example of our agricultural measures, there is a larger consistency than in many other areas. On the other hand, a study of national productivity changes must relate employment data (from several sets of surveys) to measures of production (from still another group of surveys) to measures of depreciation and capital stocks (which come from quite different and unrelated sources). Estimates of productivity change include the effect of unknown amounts of statistical incomparability. The economic aspects are tightly inter-related; the surveys through which the data are obtained are not.

In practically all of these general economic measures which I have mentioned -- national income and product accounts, input-output, flow-of-funds, balance of payments, and captial accounts, the operations of the agriculture sector of the economy are reflected. While responsibility for the formulation or structuring of the accounts is centralized, responsibility for provision of the data used to fill them out is another matter.

Agricultural Statistics

Having run through the whole field of economic statistics, I wish now to discuss briefly the area of agricultural statistics in context of the entire system. This will be brief because I don't have answers to the many questions which may be raised. I can only suggest a way of thinking by which you may turn up the answers.

I think you would agree that by far the major portion of your time and other resources are devoted to compiling statistics which are used in

day-to-day decision making or which bear on relatively short run problems -- forecasts of the current year's cotton or corn crop, or how many cattle on feed. The number of such items, times the frequency of reporting within a single year, times the number of areas for which data are desired -- to say nothing of further breakdowns by variety or weight class, etc.-- makes a very large number, although not as complicated in its calculation as to require an ADP installation. These are the lines along which the agricultural statistics program, indeed, nearly all Federal statistics initially developed. The point I wish to stress is that there seems to be almost no end to the interest in and uses of these kinds of data. And I do not wish to belittle their importance.

There is, however, another view of agricultural statistics which I believe needs emphasizing. Yesterday, Nate Koffsky remarked that we know quite a lot about the hog from farm to consumer but, if I understood him correctly, relatively little about the economic forces which affect that journey. In discussing the Department's program Monday, Dr. Cochrane said that while efforts to increase consumption will be continued -- unless free market forces are permitted to determine who produces what, how much and with what monetary return, positive or negative -- consideration must be directed to supply management. The days are long since past -- if indeed they ever existed -- when a problem of one crop or species of livestock could be dealt with by itself. What you do about the production of wheat, for example, has an impact on other crops and livestock. The impact is not limited just to agriculture. It goes on to affect practically every facet of economic activity. May I recall the illustration I just gave. The economic analyst concerned with farm income will look to data on farm production and expenses; to employment that goes to produce off-farm income received by farmers; to the investment in equipment which facilitates farm production, and so on. Looked upon in this light, the data which you compile on wheat acreage, yield and prices, on number of farms, on farm employment and wages, on land values, taxes, interest rates and a hundred and one other subjects, should not be unrelated, independent series. But collected as such, the analyst is hard put to see the relationships he is looking for.

I would suggest that too little of our data relate to the farm as an economic unit. In many instances, this economic unit is part agricultural and part non-agricultural. Let me illustrate by an analogy. In considering whether or not domestic producers should be protected from foreign competition by tariffs, one view is that it is not necessarily significant that production of a particular product or item show a profit. The decision should hinge, rather, on whether the entire operation of the producing enterprises is economically sound. Without considering further the validity of either view, the point of the analogy which I wish to emphasize is that we need to know much more about the structure and operation of the organizational or business units which make up our agricultural economy -- not just the size of the forthcoming corn crop.

While I think the economic analyst, the policy makers and the program administrators must be more articulate in making known what statistics

they need -- and how the data are used -- we statisticians should understand more about current and emerging problems so that we can develop a body of meaningful and useful statistics. I am not suggesting that we collect data on every conceivable subject "just in case." I believe we can, however, develop a system with sufficient comprehensiveness and flexibility that when it is needed, additional data can be obtained and analyzed in conjunction with data already available without always requiring new and independent collection procedures. Only then will we have what we can truthfully call a system.

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A REPRESENTATIVE SAMPLE -- DEFINITION AND CONCEPTS

By Earl E. Houseman, Director
Standards and Research Division
Statistical Reporting Service

In contrast to the title of Dr. Trelogan's talk, the title of mine, "A Representative Sample," may seem like something covered with long whiskers. "Representative" samples have been under discussion for ages. Why not talk about such subjects as stochastic processes, non-parametric methods, game theory, non-linear programming, computer simulation, or statistical decision theory -- just to mention a few of the things that appear in the professional statistical journals and are discussed at meetings of statistical organizations? Why not talk about the fabulous electronic computer and the tremendous potential it represents for advancing agricultural statistics? The temptation to do that is rather great. However, I felt, for purposes of this conference, that a discussion of some statistical concepts concerning representative sampling would be more appropriate. Actually, this paper turns out to be a mixture of thoughts or ideas. Originally, the title I intended to use was "Statistical Pot-Pourri," which is perhaps as good a name as any for the dish I'm about to serve.

We should remember that the powerful, speedy electronic computer can process bad data, execute bad instructions, turn out trash, etc., at the same fantastic speeds with which it can do highly useful work. In recent months some consideration has been given to the possibility of computer simulation of a complex socio-economic phenomenon. One of the major questions was -- is the quality of available data adequate for this purpose? In fact, it is the general emphasis on quality that leads me to a decision to talk about some basic principles of sampling rather than some subjects that might be more glamorous.

If one searches the literature he will find a conspicuous absence of effort to define a representative sample. I have never seen a good, practical definition. Have you? Here is a definition that will at least provide a basis for discussion and I hope a basis for setting a statistical standard for the work of the Statistical Reporting Service:

> A representative sample is a set of filled schedules resulting from the application of probability sampling such that the sampling error and biases associated with the method of selection, non-response, and estimation are known to be sufficiently low so the estimates will serve a useful purpose.

One year ago, the report of Panel A at the Biloxi Conference, which dealt with The Expanded Program, stated: "Future policy of this division must be directed to designing all surveys on a probability basis, with more consideration given to stratification to meet the needs for items sampled."

The definition of a representative sample that I am proposing, and the discussion to follow, attempts to add substance to the Biloxi recommendation that all surveys be on a probability basis.

Let us analyze the definition. In the first place, I have attempted to give a practical and meaningful definition -- one that is capable of achievement. Simply saying that a representative sample is an unbiased sample, or that it is a probability sample, is inadequate. A probability sample could have sampling errors so large that the results are useless. The definition states that evidence must exist to show that error due to sampling is small enough so the results are useful. Incidentally, error due to sampling refers to the error resulting from the fact that one has information from a part of the units in the population instead of from all units and does not include response error. Hence, a sample could be "representative" but non-sampling errors might be so large that the results are made useless. In other words, a sample is not regarded as unrepresentative when the trouble is not the sample. (Note that the definition says nothing about non-sampling errors.)

For purposes of discussion, I am defining a probability sample as all of the units that have been selected by the application of probability theory irrespective of whether information is obtained for all of the units selected. For further clarification of what the definition means, let's assume that we have a clearly defined population of 100,000 farms and that each farm is identified in a complete file. Suppose a stratified random sample of 1,000 farms is selected from this file. This sample would be a probability sample of 1,000 farms. Now, suppose a questionnaire is mailed to the 1,000 farms in the sample and that 200 returned questionnaires are usable for tabulation purposes. This set of 200 questionnaires would be admitted by the definition as a representative sample provided there is sufficient objective evidence to support a conclusion that error due to sampling, which includes bias due to non-response, is sufficiently low so the estimates will serve a useful purpose. Generally speaking, a mailed-questionnaire survey without interview follow-up of a sample of non-respondents would not satisfy the definition if it is a non-recurring survey. However, recurring surveys making use of mailed questionnaires without follow-up interviews with non-respondents may be regarded as representative provided that interview surveys of non-respondents have shown that any non-response biases are satisfactorily treated by appropriate estimation techniques such as weighting to adjust for differential response by size of farm, for example.

We should note that the proposed definition of a representative sample does not admit non-probability sampling. The reason for this is twofold: (1) A satisfactory means of evaluating sample results emanating from non-random (non-probability) processes does not exist. At least, there is no way of evaluating non-random samples except by comparisons with information from other sources. But, what criteria does one apply to the evaluation of data from the other sources? Good agreement or poor agreement between the results of a sample and results from some other sources does not establish or disprove the precision or accuracy of either. In other words, we are

forced to the point of view that the only real basis for evaluation of an estimate is inherent in the processes which produced the estimate. (2) The second reason for limiting the definition to probability sampling is the existence of theory. Probability sampling, when properly executed, permits the use of the theory of probability for the computation, from the sample itself, of probability limits of sampling variation in the estimates that come from repeated application of the prescribed procedure under identically the same conditions.

At this point, I would like to review, because of their importance, the basic properties of a simple random sample. This will provide a background for discussing some concepts of error and for pointing out the importance of having a statistical practice with a good theoretical foundation.

Simple Random Sample - A sample of n drawn from a population of N farms is a simple random sample of n farms if every combination of n units out of the N farms in the population had the same chance of being the sample selected. Selection of individual farms one at a time, without replacement, by means of a table of random numbers is a process which yields a simple random sample. (Actually, simple random samples are seldom used in practice because there are better ways of probability sampling.)

Let the "true values" for the N farms in the population be X_1, X_2, X_3,..., X_N. The true mean, $\bar{X}$, is the average of all of these true values and variance among these N farms is

$$\sigma^2 = \frac{\sum (X_i - \bar{X})^2}{N-1}$$

Assume that a simple random sample of n farms is selected. Also assume no response error and complete coverage. Then, the properties of the sample mean are:

(1) $E(\bar{x}) = \bar{X}$ That is, the average value of the sample mean, $\bar{x}$, is equal to the true mean $\bar{X}$. In statistical parlance, the sample mean is an unbiased estimate of the true mean $\bar{X}$.

(2) $\sigma_{\bar{x}}^2 = \frac{N-n}{N} \frac{\sigma^2}{n}$. This is the formula for the variance of the sample mean. From the sample itself an unbiased estimate of σ^2 can be computed and substituted in the formula. This provides an unbiased estimate of the variance of the sample mean. In order to use this estimated variance as a measure of precision, the following property is used.

(3) The sample mean, $\bar{x}$, is normally distributed. That is, if numerous samples of size n were selected and a mean, $\bar{x}$, was computed for each, the frequency distribution of the means would be normal. This is an approximation, but many investigations have shown it is satisfactory for most practical purposes regardless of the distribution of the population.

These three properties provide the basis for making statements about sampling error. If the two conditions, no response error and no

non-response, hold one could make a valid statement such as, the probability is 95 out of 100 that the sample mean is within a range of 5 acres on either side of the true mean. Generally speaking, the two conditions, no response error and no non-response, do not hold. Nevertheless, valid statements about sampling error can still be made but they must take a different form.

At one time I considered the possibility of following a step by step procedure, each step extending the theory a little further to more realistically represent practical conditions. This will not be done, but let us extend the theory one step further. Assume that response errors do exist, but to maintain simplicity, assume complete coverage of the sample -- that is, no non-response.

Suppose that the answers to a question are not always correct and let $Y_1, Y_2, Y_3, \ldots, Y_N$ represent the answers to a given question if all farmers were asked the question under a given set of conditions. Let the corresponding true answers be represented as follows: $X_1, X_2, X_3, \ldots, X_N$. What can be said about the properties of a random sample? First, the sample mean is an unbiased estimate of $\bar{Y}$, which is the average per farm that would have been obtained if the question had been asked of all N farmers in the population. Secondly, application of the formula for the variance of a sample mean yields an estimate of the sampling error pertaining to the variability of the sample mean about $\bar{Y}$ rather than the true mean $\bar{X}$. The difference between $\bar{Y}$ and $\bar{X}$ is the response bias. The important point is that a computed sampling error is a measure of the variability of a sample estimate around the result that would have been obtained by a complete enumeration or census taken under the same conditions. The sample is still regarded as unbiased as long as any biases in the estimates are attributable to causes other than sampling. Under the assumptions involved, the presence of response error does not invalidate probability theory. But in contrast to the kind of statement about sampling error that was given above under the assumption of no response error, a statement interpreting an actual computed sampling error should refer to variation from the result that would have been obtained from a census taken under the <u>same</u> conditions. As a matter of fact, a census can't be taken under the same conditions, so the real interpretation of a sampling error is conceptual.

Let us return to the proposed definition of a representative sample. It was intended that this definition should describe in general terms a standard for data collection and estimation -- that is, a practical process which, <u>from a sampling point of view</u>, will provide estimates that one can have as much or more confidence in than any other process. I suggest that work groups A and B consider the possibility of adopting this definition, or a modification of it, as a standard (goal) of statistical practice in SRS. There are many advantages of having a statistical practice with a good theoretical basis. We should recognize that probability or statistical theory can be as important to statistical practice as, for example, chemical theory is to the development of new and improved products. Some major contributions of theory include:

(1) Theory replaces costly experimentation. For example, consider the problem of determining sampling error. Mr. Simpson and others will recall that in the 1930's a project was set up in New York City for testing theory and studying sampling error by empirical means. Numerous samples of a given size were selected from the files of information that had been assembled for all farms in selected counties. Averages and ratios were computed for each sample so the variability among samples could be studied. Also, samples of various sizes were selected so the effect of sample size on sampling error could be examined. In the absence of valid theory such laborious processes are necessary to answer important questions concerning statistical methods. On the other hand, a variance formula, such as the one given above for a simple random sample, means that one can estimate the sampling error from a sample itself. Moreover, the formula provides a basis for estimating the sampling error for a sample of any other size or of estimating the size of sample required to achieve a specified level of sampling error. Incidentally, the formula for the variance of the mean of a simple random sample represents an arithmetic fact provided previously stated conditions of randomness, no response error, and no non-response are met. Under the conditions stated there is no question about the validity of the formula and this is true regardless of the application that is being made of simple random sampling. The same is true for other probability sampling designs. The formulas vary with the design but the principles are the same.

(2) Theory aids progress on improving the quality of estimates. The total error in an estimate is the sum of components of error associated with many sources. In the absence of probability sampling and appropriate statistical methods, a satisfactory means of evaluating various components of error does not exist. Evaluation of components of error is fundamental to the improvement of the precision and accuracy of estimates. In fact, progress is contingent upon being able to isolate and estimate the magnitudes of various components and then taking appropriate action. Although present statistical theory leaves much to be desired, it is a powerful tool for evaluating components of error. In my opinion, there is virtually no hope for successful evaluation of various sources of error in a statistical practice that is not founded on the theory of probability sampling.

(3) Theory assists in the design of surveys to achieve maximum reliability per dollar. To the extent that information is available, a typical example of this is setting up a formula for the variance of a sample estimate as a function of components of sampling error. A cost equation is also set up and mathematically the sample design that will minimize sampling error per dollar is derived.

It is impossible to begin to indicate all of the ways in which theory can serve a useful purpose in our statistical work. One must be acquainted with appropriate theory and how to use it to appreciate its value. I am reminded of the statistical quality control chart. To a non-statistician in an industrial plant, for example, it is on first glance simply a meaningless, useless set of points and lines on a piece of paper. But as one becomes acquainted with the quality control chart and has had experience using it, it becomes a valuable device -- a device that can help save millions of dollars.

I have been stressing the value of statistical theory because I believe therein lies the fundamental reason for having launched the expanded program. Important reasons that are more frequently expressed include greater objectivity, a higher degree of adaptability for meeting new data needs, and ability to compute sampling errors. The purpose of the June Enumerative Survey is often expressed as that of providing more frequent benchmarks for undergirding the present program. This is an excellent objective, but it should be regarded as an intermediate goal. The proposed definition of a representative sample, which is suggested as a standard for adoption, reaches much further than undergirding the present systems with more frequent and better benchmarks. The report of Panel A at the Biloxi Conference last year also goes much further than just thinking about enumerative surveys for getting more frequent, better benchmarks.

In addition to a standard for sampling, other standards are needed. We should be able to set standards and describe practical procedure which will specify a process that will produce indications in which a maximum of confidence can be placed. I believe it is possible, but certainly not easy, to achieve at some future date a statistical practice such that accepting an indication as an estimate would be the general rule rather than the exception. If more than one estimate (indication) was available, the estimates would be weighted using weights that would minimize the variance of a weighted average of the estimates.

At this point I would like to interpose a few remarks about the discrepancies between results from the June Enumerative Survey and official estimates. First, it should be clear that the lack of agreement does not discredit the principles that are involved in the theory of probability sampling. Secondly, it is obvious that the size of the sampling errors (coefficients of variation) of estimates from the June survey leave much to be desired, especially when one is talking about a level of tabulation detail such as age groups within states of a livestock species. Actually, the sampling errors for estimates from the June survey give emphasis to a fact that has been recognized for a long time; namely, a general purpose or cross section sample (i.e., having a uniform sampling rate) is not an efficient sampling design for any particular commodity--even major commodities. A general purpose sample is needed but it must be supplemented with special purpose sampling, or vice versa. Any supplementary sample should be designed so it will, in combination with the general purpose sample, provide an efficient representative sample for the specified purpose. The theory of probability sampling is highly

flexible and applicable in this case following the usual objective of designing a sample (or samples) to minimize sampling error. It is the development of suitable "frames" for special purpose sampling to supplement a general purpose sample that is lacking at the present time.

At the time plans for this conference were being developed, Dr. Trelogan suggested that I should discuss some matters that would be related to each of the work group assignments. My discussion so far has related primarily to Work Groups A and B. I would suggest that some consideration be given to the possible need for a glossary of statistical terms--not a complete glossary but one that would serve as a reference for terms that are frequently used and ought to be commonly understood. Secondly, is there a need in SRS for a handbook of statistical standards?

The question may be asked, what is meant by statistical standards? The suggested definition of a representative sample, if adopted, would be regarded as a standard. A statement of policy or procedure for dealing with "not-at-homes" in an interview survey is a standard. In fact, any statement or procedure that has an influence on the accuracy of a final result could be regarded as a statistical standard. What guidance or suggestions do you have on this matter of developing and setting standards? This question is very closely related to a topic assigned Work Group B, namely, "Criteria for evaluating reliability of estimates."

With respect to Work Group C, on "Behavioral Responsibilities," there are some questions in the public relations area that involve statistical standards. What are the responsibilities of SRS to the users of agricultural statistics for making known the reliability and deficiencies of the estimates? How does one evaluate the demands for new statistics? How does one deal with the problem of discontinuing estimates of doubtful value? How does one determine the degree of precision needed in estimates? This is important because added increments of precision are very costly.

"Management Planning", the subject assigned to Work Group D, is becoming increasingly important; in fact critical in my opinion, as serious consideration is given to new data processing methods and substantially improved statistical methods. I am referring to production management -- that is, such things as flow of work, work scheduling and work measurement, which probably by oversight didn't get much emphasis in the listing of topics. Mr. Bibby, President, Remington Rand Division, Sperry Rand Corporation, stated in an address before the Eastern Joint Computer Conference:

> "One of the paradoxes of our age is that advances in science and technology are far outstripping man's ability to manage his affairs. The day may not be far distant when flights from New York to Washington will take all of three minutes, and from London to New York 45 minutes -- which has led one wit to exclaim that you will have breakfast in London,

> breakfast in New York, breakfast in Chicago and luggage in Atlanta. The reference to luggage puts the finger on the problem, namely, whether man's ability to organize and manage can keep up with his ability to conquer space."

In my opinion, advancing the use of modern statistical and data processing technology in SRS will challenge our ability to organize and manage such advances.

Many computer installations are using the computer to help solve management problems. The S&R Division has had a rather elaborate accounting system for its data processing operations. We plan to install an improved system which will provide the users of the data processing services current, detailed information about components of costs of the data processing work performed on each project. In addition we have, in process of development, a computer program that is related to the cost accounting system and will schedule the data processing workload by project and by individual data processing functions for a month or two in advance.

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REPORT BASED ON SOME FINDINGS OF ADP TASK GROUP NO. 2

By Glenn D. Simpson, Director
Field Operations Division
Statistical Reporting Service

This is the third successive National Conference of Agricultural Statisticians in which I have prepared a paper on Automatic Data Processing. In April 1957 at Kansas City, we had a short paper entitled, "Possibilities for Electronic Computing." The present SRS IBM 650 in Washington was not then on the scene. In that Kansas City paper, we outlined a possible configuration with 3 or 4 medium-sized computers and a bigger one associated with the Crop Reporting Board. The field offices were to be wired to the computers and our statistical data would flow back and forth between the field offices and Washington.

Last February at the Biloxi Conference, the viewpoints were considerably more definite than in Kansas City. However, they were still largerly of an imaginary nature and not based on detailed study of the basic problems confronting SRS in the application of ADP to its field office and Crop Reporting Board procedures. To refresh your memories, some of the larger problems seemed to be as follows:

1. SRS has a complex day-to-day reporting function that cannot be stopped or otherwise jeopardized while new data processing methods are tested and installed.

2. A detailed Feasibility Study would have to be conducted.

3. The very nature of electronic computer development tends to point any data system toward centralized data processing.

4. That State, Regional and National estimates should be considered as having equal priorities in the matter of timeliness and accuracy if important political feasibility is of any consequence.

5. That perhaps there are less than 6 present-day field offices that can reasonably expect to justify their own ADP processing plants.

6. The demands on the organization for new statistical series, greater detail and increased accuracy were increasing rapidly and our ability to meet these demands were being inhibited by lack of funds in some cases, but lack of staff and technical facility in others.

Perhaps the most significant development at the Biloxi meeting was the show of 26 hands when you were asked, "How many State offices now have access to computing facilities of some type within the State agency?"

Subsequent discussion revealed several important trends, not the least of which was that some of our State offices were somewhat ahead of Washington in thinking about the possibilities of ADP and the important problems involved. A second important observation was that the 26 States were facing a problem of becoming associated with several different kinds of ADP equipment. This situation might ultimately lead to chaos that substantial incompatibility of equipment would eventually produce, unless some coordinating control was invoked.

This very short background statement brings me to a brief report based on the current Feasibility Study of field office and Crop Reporting Board operations as of this date. In making this statement, it should be remembered that the Feasibility Study is far from complete and I will not present results that necessarily represent agency viewpoints. In presenting some thoughts on the possible application of ADP to the present, as well as possible future data systems of SRS, a few explanatory statements seem appropriate. Many in this room will know these facts, but others here probably do not.

First, it seems important to note that our present-day system dates back to about 1914. The Crop Reporting Board was established in 1905 and about 1914 the existing State office structure evolved with the appointment of State Agents in many States. Questionnaires mailed out from State offices to voluntary respondents were the primary source of data as various lists maintained in Washington were decentralized to the States and new mailing lists were developed. State Farm Censuses were carried on in several States and some had existed for many years prior to 1914. The Rural Mail Carrier Surveys were inaugurated in 1924 and have continued unchanged in their basic concept to the present time. There are other significant dates in this period, but I will not take time to mention them. Over this period of time, many significant changes have been made to improve our data system, but they have been mostly commodity or report oriented. Our present-day data system of voluntary, non-probability sampling is about 48 years old and it remained largely unchanged until 1957, when the Long-Range Program was presented to the Congress. Some of you may disagree with this brief historic description, but this is the way I see it in the light of my own background.

Second, our system has been essentially a manual system since the beginning and it is still so today. The only generally significant change in our data processing techniques in the State offices occurred in 1953-54, when the hand tabulation of incoming questionnaires was discontinued and the peg-strip procedure for data summarization was adopted. A few offices have not totally adopted the peg-strip procedure yet. This change was actually forced into being in the larger States with the increasing difficulty encountered by the hand transcription of literally millions of numbers annually. With the changeover to the peg strips, we undertook a rapid change in the format of our questionnaires -- some of which had not been altered for 10-20 years. This is not to imply that these earlier processes and forms were inadequate or poorly designed. They did the job satisfactorily as the job was conceived at the time. However, evidence

in the past 10-12 years has made it increasingly apparent that our basic job is changing in the face of demands for more detailed statistics, increased frequency of reports and greater accuracy.

Third, in my office and equally so in Mr. Smith's office, scarcely a week goes by when we do not receive some rather critical comment from some field office concerning the demands for new analysis, more detailed estimates or other statistical refinements that are being pressed onto them by the Washington staff. In truth, these demands for a better statistical product originate fully as often in the States as they do in the Washington staff. In my mind, this is an important sympton that represents a meaningful need for better results from SRS. It may also be an indication that our extensive program may have again become "paper-clogged" and "procedure-bound" to the point where our ability to extract more from our manual system and existing staff is approaching, or has already reached, the saturation point. The addition of a clerk or a statistician to every office will not alleviate this condition, except in random offices and then only for a temporary period.

A Brief Description of the Feasibility Study

In July 1961, the Administrator appointed Task Group 2 with the mission to outline and conduct a detailed study on the feasibility of ADP to our present, as well as possible future data systems. By the end of last July, we assembled a Study Team of 6 field and Washington statisticians assigned to work on the Feasibility Study on a full-time basis. Being almost totally without experience, the members of Task Force 2 and the Study Team attended various ADP training programs to learn something about the ADP language and how to proceed with the project. About September 1, the Feasibility Study actually got underway in two selected States -- Illinois and Wyoming. These two offices were selected to represent rather typical day-to-day processes in other State offices, both as to quantity of data manipulated and scope of the reporting program. Obviously, two States is a small sample, but it was believed that findings would probably represent fundamental program characteristics elsewhere. The Feasibility Study was outlined as a total system analysis, even though our limited manpower forced concentration on 10 selected reports as a first step in the over-all system analysis of SRS.

There is no text book available on how best to conduct a Feasibility Study of this sort. Equally distressing is the fact there are numerous ways a Task Force might approach the subject. One can study the entire SRS program or a clearly defined part thereof; or the work of a Washington Branch or of a field office; it could study the basic source data or study only the over-all program output of final reports. The procedure Task Force 2 finally outlined does not have unanimous concurrence even within SRS.

The Feasibility Study was conceived as a systems analysis that was source data or document oriented. This means the Study Team described every operation or processing action starting with the receipt of the original

questionnaire and following it in greatest detail all the way through the field office and the Crop Reporting Board, including issuance of the official Board release. In this process, every document is carefully identified and each is related to all other documents in proper sequence. By documents we mean questionnaires, summary forms, check records, etc. This great detail seems necessary in this type of Feasibility Study if we are to achieve the first requirement that we accurately describe the present system before decisions can be made on how it might be changed. This is even more important if ADP may enter the system. Furthermore, the Feasibility Study was not machine oriented in any respect -- that is, the Task Force did not have a specific computer or computers in mind -- the major objective was to describe the present data system. At the moment, the Task Force has no recommendation regarding the size, number or location of ADP equipment.

I may startle you by saying that we really do not fully comprehend our present system and that no statistician in this room can describe accurately and in proper sequence the exact processing steps performed on even an average-sized survey as it moves through his office. The large charts on display here illustrate the document relationships for the October Farm Report and the Fall Acreage Survey in Illinois. A similar chart for the Prices Received Report in Wyoming will be available for your individual information, as will other forms and devices designed by the Study Team. These charts represent the actual movement of all the numerous documents through the field office as these two reports were actually processed. Each symbol on these charts represents an action or treatment of some sort as the data moves along. Allow your mind to visualize this process if our processing procedures are automated and we must tell a computer exactly what action it should take at each one of these stations.

In its present uncompleted state, the Feasibility Study is turning out to be an assembly of figures, actions and relationships, some of which are confusing and often quite disturbing. In fact, the study doesn't do much more than raise several very important questions. Nevertheless, these questions must be brought up and debated by objective minds if we are to move into an ADP configuration in a meaningful manner. The remainder of this paper will be devoted to some of these questions with the hope they will stimulate your thinking as you visualize your responsibilities in an ADP setting.

Some Fundamental and Contradictory Characteristics of the Present System

The Feasibility Study seems to have clearly pointed out two substantially contradictory concepts of the present SRS program as it involves the State offices and the Crop Reporting Board. This contradiction appears whenever we try to equate automation against the basic structure of the SRS, its data sources and report responsibilities.

I will identify these major contradictions as the <u>great</u> <u>variability</u> that characterizes the SRS system versus the <u>extensive</u> <u>uniformity</u> within the

system. Addressing the subject of variability, the present SRS reporting program can be described as one that contains about the maximum variation one could expect to see. It is actually made up of numerous separate data systems that are each of substantial workload volume and as different in their origin and requirements as is the broad array of commodities or other items we are required to estimate. These several separate data systems come together as an integrated program of statistical reports at the Crop Reporting Board and agency level where all are controlled in a master output program of closely scheduled release dates. This extensive reporting program has developed historically somewhat by trial and error, but primarily as the needs for statistical data have developed within Agriculture. We may also safely judge that in the future our statistical program will continue to be shaped by the needs of agriculture and not by the needs or wishes of statisticians, systems people or ADP experts.

Even though in some quarters, the present complex of SRS statistical reports may appear eligible for rather dramatic change, it is in fact one that can be changed only in the most carefully conceived and tested manner if the statistical data needs of agriculture are to be met on a current and timely basis.

Perhaps the best way to point up the great variability in the present data system is by quick reference to some of the various separate data systems. These can be identified by such major differences as that required in the estimation of acreage and production of field crops and factors associated therewith; market flow crops as represented by the array of fresh vegetables where weekly statistics scarcely satisfy the demand of producers and enumeration procedures tend to be the rule; livestock and livestock products, which industry is rapidly becoming a highly specialized enterprise; prices received and paid by farmers where the respondent universe is not engaged in agriculture, but servicing it as part of the total economy; farm labor and wage rates for full-time and migrant farm workers; poultry and poultry products where the concept of vertical integration has made significant gains and has altered our sampling and estimating techniques; and the requirements of the 43 cooperative, integrated but different State statistical programs where the expenditure of State funds, including matched monies, totals nearly two million dollars in the current fiscal year. This input of State funds increases from year to year as State statistical programs are expanded to meet greater local needs. This list is not complete by any means.

It is difficult at this time to visualize that any one sampling, data collection, processing or analytical plan can be designed to include all this variable array of statistical responsibility at all geographic levels and all facets of agriculture and still meet the complex reporting requirements within the existing time schedule.

Now I will attempt to sketch those factors that point to extensive uniformity within the present system. It is firmly believed that the basic operational and statistical processes employed in the Crop and Livestock Reporting work reflect a high degree of uniformity between

surveys and between field offices. In the main, these processes are mail list development, selection of names, addressing, review, editing or purification of source data, tabulation and summarization, computation, analysis and estimation, output of final result, and updating and storage of records. The uniformity of these major processes persists in the face of known, and in some cases significant, variations between State offices in the size of any given survey and the range of the input data.

With but few exceptions, the elementary work steps, which are the major workload factors and which comprise the basic processes just named, appear adaptable to ADP methods and equipment.

Sizeable between-State variation exists in input data volume, coverage, and composition. These recognized variations will continue to exist under any modified system, since they stem from variations in the agriculture between States and State statistical programs, and not primarily from requirements of the present system.

The present SRS staff, both clerical and professional, seems taxed to the limit to process the existing volume of source data within prescribed program due dates. The relatively simple, straight-line type of processing performed (counting, adding, averaging, comparing, weighting, etc.) is primarily controlled by the limitations of time and staff, and herein lie the conditions suitable for efficient application of an ADP system.

To repeat then, we must shake out our thinking in an effort to reconcile these evident factors of program variability and the contradictory factors of similarity in the data manipulation throughout the present system.

Centralization versus Decentralization of Statistical Functions

From its original inception until about 1914, the Crop and Livestock Reporting work of USDA was a centralized function. As I read the history of the organization, the decentralization that got underway about 1914 was predicated on several factors: (a) As the volume of source data increased with gradual program expansion, there was evidence of increasing difficulty associated with timely handling and appropriate accuracy control with the data being assembled and estimates prepared in one location for the United States; (b) our predecessor statisticians must have believed that much was to be gained by having the responsibility for list building, data collection, statistical editing, the preparation of estimates and significant public relations located as close to the source of the original data as possible; (c) there was a substantial interest in State statistical programs designed to meet local needs for statistics that goes back much beyond 1914. Between 1914 and 1920, several States began significant cooperation with the U. S. Department of Agriculture in joint programs for Agricultural Statistics; and (d) in any manual data system, such as ours, it has been demonstrated over time that small, highly skilled clerical staffs such as comprise our State office groups can skillfully and effectively process our highly variable volume of data

under very tight report due dates. The pure mechanics of total volume and the distance between the sources of data and the final Crop Reporting Board report seem to underline this conclusion.

With the advent of modern computers, we now must face the fact that some of our historic concepts are subject to a critical re-evaluation. There is much evidence around us that the combination of computers, plus appropriate data transmission devices opens up some new avenues for critical thought. Possibly our present problems are exactly like those our predecessors faced a half century ago, but with a different direction involved. Computing equipment has proved its ability to store greater and greater quantities of data and to process it at higher and higher speeds. There is no question about a computer's built-in capability to perform many of the data processing activities that we currently perform manually. It therefore follows that the usual ADP systems application has within it all the overtones for centralizing these processing functions. Along with computer development, one must consider the status of rapid data transmission which is perhaps the greatest problem facing SRS. One cannot help but feel the problem of moving data from half a million separate original data sources located all over the country to a central computer would seem to defy solution. Do not forget, however, that significant resources are being applied to research in this area of data transmission. In view of present scientific achievements, one must simply assume that the problem will be solved so that speed, economy and timeliness will be built-in components of a unified data transmission system.

These brief remarks attempt to point out another major decision that actually faces the organization very soon; namely, centralization or decentralization of our data processing function.

Probability Sampling and the Long-Range Program

The basic concept embodied in the Long-Range Program, which enables the organization to move into probability sampling, as well as several technically sound derivatives thereof on an operational basis, opens up a new horizon for improving the technical adequacy of agricultural statistics. The fact that the statistician has the facilities of probability samples, both mail and enumeration, should stimulate his thinking. Even though in the immediate future, we may be able to achieve statistical accuracy at theoretical levels for only a small number of the more important commodities in our total area of estimating responsibility, the possibilities for development are challenging.

We cannot foresee the effects of future program modifications upon the total SRS data system. It does seem clear that the recognition of probability sampling as a desirable instrument for data collection will result in its widespread use throughout the organization. The data manipulations required for computing estimates and their sampling errors are such that ADP, as compared with other available systems for data processing, gains efficiency rapidly with survey size.

Therefore, is it a fact that future program modifications will tend to extend the application of ADP and increase, in terms of workload, the demands made upon the organization for statistical data at all levels?

There is considerable validity to the argument that the sampling errors of estimates need not be computed, except at periodic intervals or at some point following the publication of an estimate. However, is not the computation of sampling errors and other significant statistical measures beyond the capability of our existing personnel resources at whatever point they may need to be computed?

Additional Statistical Measures for Use in the Present Data Processing System

Last fall, the Wyoming office was equipped with a small EAM (Electric Accounting Machine) configuration made up of key punch and verifier, sorter, collator and accounting machine. This office programmed and processed the December 1961 Pig Crop Report with this equipment under actual due-date conditions set forth in the Technical Instructions for all offices.

The mechanical summarization procedure programmed in this test provided the Wyoming office with listing sheets for both identical and non-identical forms showing data for individual questionnaires. The county, Crop Reporting District and State totals were provided and fulfilled all of the summarization requirements of the Livestock Section, AED and the CRB. All data and records retention requirements were fulfilled so that questionnaires can be destroyed at the required time.

A more important feature of this test is the several additional summaries produced by the EAM summarization process. Besides meeting all summarization requirements set forth in official instructions for the December 1961 Livestock Survey, the sample data for Wyoming were summarized by size groups for both 1961 and 1960 for hog inventory, sows farrowed, cattle inventory (1961 and 1960) and calves born. It is important to point out that these types of summaries have nearly always been beyond the capabilities of the present manual system within the survey time limits without the application of extra personnel resources.

This experiment proved that once the data are captured on machine media, punch cards in this case, additional tabulations can be obtained with rather minor inputs of machine time, even with EAM equipment. This seems to be a very significant, even though a relatively small test, but the question I wish to raise with you concerns the actual value of these additional size group tabulations in the final estimating process. We all know that in a voluntary mailed sample the summary of the data by some grouping other than the Crop Reporting District is very interesting but they have always been most difficult to use without a proper set of weighting factors. Are suitable weighting factors now available, or can you prepare estimated weights for your State that will yield a separate

and reliable indication for estimating purposes? If the answer is "yes," then these new but readily available data arrangements are of immediate value in a non-probability sampling situation. If the answer is "no," then EAM in this case seems to leave us exactly where we are today, so far as new or better sample indications are concerned.

The State-Federal Cooperative Program

I cannot prepare a long dissertation on this important subject, except to say the State statistical programs present innumerable questions in terms of ADP. As already pointed out, the several States now have a financial input of nearly 2 million dollars annually in the joint statistical programs and this is growing. The basic hypothesis on which this cooperation rests is that the State and Federal Departments can combine their funds in a single statistical program that does a better and more economical job for both agencies.

As we consider moving into ADP on a more extensive basis, will your State Department of Agriculture go along with whatever configuration is finally decided to be best for the Federal statistical program?

Has your State Department been, or will it be, committed to an ADP installation, which will be justified in part by considerable data processing work from your office?

If the occasion arises, can we split the basic source data in two parts with the State part of the program being processed one way and the Federal part another?

Here are only three of several questions in this area and you, who are closest to the individual State Governments, will have to provide essential guidelines for the immediate and long-range future.

How Do You View an Electronic Computer?

I will openly confess that I am not a computer expert in any respect -- I know nothing about the details of programming a project for a computer, but I have taken some work and have read quite a bit of literature designed to educate one in the capabilities of computers.

I have personally learned to view a computer essentially as a calculating machine, possibly much as the Monroes or Marchants that we use every day. The difference lies in the computer's ability to do many more things and to manipulate the data at speeds really beyond our conception. It is a device by which I can probably do my work better, do it faster, cheaper and even do much more work. Some people may feel they lose control of their data as soon as a digit becomes represented by a hole on punch card or strip of paper tape, or as a sensitized spot on a piece of magnetic tape. If these holes or spots contain the correct digits and you can tell the computer what to do with the data, the machine will follow these instructions. The problem facing us is one of devising and accepting for

ourselves a new and modern definition for control of our data. If we will be totally truthful, we do not have actual control of our data in the present manual system. A quick reference to these document charts for Illinois should convince anyone of this fact.

Are we not faced with the urgent requirement to carefully investigate the capabilities that these new devices provide with the clear objective that they represent new tools by which we can do a better job?

Impact of ADP Upon the Organizational Structure of SRS

It was the opinion of Task Group No. 2 and its Study Team that the impact on the organization by an expanded use of ADP of as much as 1/2 or 2/3 of our total statistical responsibility will be of major proportions. There will be rapidly increasing requirements for greater technical skills in the professional staff; retraining and shifting of the clerical staff; increased demands for statistical data that can be met may lead in time to a somewhat larger staff; total costs will probably be greater than now but increased output of statistics with much greater usefulness and timeliness will develop, and unit costs should definitely decrease.

We can foresee future activity of the journeyman or commodity statistician undergoing some rather marked changes. For example, statisticians will be devoting much of their time to the preparation of editing instructions before a survey is ever made, thus allowing many of these time-consuming processes to be done by machine. The level of technical competence in the entire organization will increase through our various in-service training programs. As this comes about, much more professional time will be devoted to sample design, both by mail lists and nonresponse procedures and enumeration. We will probably find ourselves increasingly called upon to perform as genuine technical consultants and advisors in the technical statistics field. I will also add that our public relations and statistical service work will increase in the States and in Washington as demands increase for better and more timely estimates and forecasts.

It seems important to observe that the questions I have presented here can only be resolved through a coordinated team effort by every responsible echelon in SRS. No one field office, or Washington Branch or a single one of the three SRS Divisions can do this job alone. Each has a part to play and has ample responsibility. Furthermore, we must be willing to put any existing procedures under objective test and be mentally prepared to adopt automation where it is proved feasible and not waste time and money where it is not feasible. There seems to be no reason why a combination of manual, EAM and ADP systems cannot be made to work efficiently.

Before closing, I want to add an experience reaction that has resulted from some participation in the Feasibility Study to date. It is the kind of detailed mental exercise that leads to almost total frustration in many situations. It is not easy to tear apart and critically examine a time-honored procedure that has proved its value for many years. In this

project, one often finds himself badly torn between a technical and emotional evaluation of a proven process and he may not clearly distinguish one from the other. Still, there is tremendous professional challenge to this activity, providing we can adjust our minds and recognize that these new devices have the capability to do many of the things we now do manually or not at all. How many times has every statistician in this room wished out loud that he had more time to appraise his sample or to reassemble selected parts of the sample for a better or more fruitful analysis?

In fact, there is the capability that will allow us to do things that we do not even visualize at the present time. Before you get very deep into ADP, you will find a requirement to divorce yourselves from many opinions and conditions you have come to accept over the years as being unquestioned truths. A recent speaker before one of our ADP seminars in Washington stated that the three greatest "stumbling blocks" to changing a presently operating data system are experience, good judgement and expert opinion. I found it very difficult to swallow this remark at first, but the point of the statement was not facetious. Ezra Glazer really meant that our experienced minds can actually be looked upon as being long lines of files or file cabinets, that are crammed full of significant but historic relationships. In the case of Agricultural Statisticians, these relationships most often have factual background in a numerical sense. When our respondents report an unusual set of numerical values, we mentally search our experience file, locate similar arrangements of values, exercise our good judgement and give voice to an expert opinion. Glazer says that where factual data are involved computers can search the experience file very rapidly and completely and compare more different numerical relationships than the human mind can possibly do in any reasonable time. We simply must eventually accept the fact that these transistorized gadgets can perform these services the way we want them done.

So in closing, I will paraphrase Ezra Glazer -- we SRS people assembled here (and I will include our MOS and other friends) represent the experience file of the Agency. "We in this room are the oldest files in our respective offices and have the fullest drawers."

* * * *

REPORT ON BILOXI CONFERENCE

By R. K. Smith, Director
Agricultural Estimates Division
Statistical Reporting Service

Referring to Charlie Kiefer's talk, I am glad to have the results of his tabulation of the comments from field and Washington on subjects to be covered here. The high ranking of the requests for a report on Biloxi leaves me a little disturbed about what I have prepared, but here goes.

In preparing this report, I have called on many of those in the Washington office who were at Biloxi. This has accomplished two worthwhile objectives. One, it emphasized the recommendations made last February and brought a fresh look at the perspectives. And second, it enabled me to bring out some areas I would surely have missed. I want to express my appreciation to all who gave me their suggestions. In order to keep within a reasonable time limit and keep the report general, I have had to leave out some details and combine others. I hope I'll be forgiven for this. It is impossible to repeat and deal with every recommendation separately, but if you have done your homework, I am sure you can follow along with me. I hope that having copies of the various panel reports has refreshed your memories on what took place at Biloxi and will furnish some of the materials on which to build the foundation for this conference. I am sure many of these same recommendations are coming up here.

Panel A - The Expanded Program

Panel A directed its recommendations toward four areas: (1) current operating program, (2) objective yields, (3) agricultural price statistics, and (4) additional services needed. At the time of the Biloxi Conference it was known that the enumerative survey program was to be expanded to what was considered to be an operating level in 15 States. Another 5 States were provided for in the 1962 appropriations and funds have been requested to put an additional 4 States on this basis in 1963 as well as place all Western States on a pilot basis. Enough information has been carried in recent staff letters, so you should be familiar with the projected expansion in this area. The expansions from the 1961 enumerative surveys were mostly available and were considered in connection with the Board estimates on both crops and livestock. In an effort to smooth out some rough spots we have two committees now at work in this area. One is reviewing the June enumerative questionnaire, determining what indications are needed when, and preparing recommendations as to the best way to develop these indications for 1962 between the time the enumeration is completed and the data are required for the preparation of official estimates. This has been one place where we have had some problems. The other committee is taking a look at the format of instructions for submitting data for both enumerative and objective yield surveys with the view to streamlining processes and reducing the number

of forms required. If these data are to be fully used in making the official estimates they must be available to the statistician at a time and in a form which will permit adequate consideration. Tomorrow morning you will hear a discussion of the results of the enumerative surveys, so I will not take time now to go into that. The June 1961 surveys did, however, provide for the enumeration of a few of the largest operators in terms of wheat, livestock, and poultry to supplement the general-purpose sample. Further research in stratification and the preparation of specialty sampling frames is high on our list of priorities. This is still in the research area.

The first steps in exploring the use of probability lists obtained by screening segments contiguous to the regular enumerated segments were carried out in Alabama and Iowa. Three mailings were made to the list obtained from this screening and consisted of a general farm questionnaire (comparable to the first of the month Farm Report questionnaire), an A & P card and a livestock questionnaire. In order to provide precise measures of selectivity bias, 300 interviews of non-respondents were made in each State for each survey. Analysis to determine the size of the non-response bias and to discover ways of coping with it have not been completed yet, so I cannot report further on this project. Probability samples are being designed for some of the new projects, such as cane berries, where we plan to use a combination of mail and non-response interviews.

There has been considerable discussion concerning the use of assessors lists in States with a high quality assessors enumeration as a basis for probability sampling by mail or enumeration or a combination of both, but this has not gone beyond the discussion stage. The use of lists from the census of agriculture has also been discussed, but there are a number of limitations involved here. Recently the Washington office of ASCS has offered the services of their State and local people in securing names of voluntary reporters. They have also offered the services of their community committeemen as reporters. These two possible sources of names are hardly consistent with probability sampling. We need to look further into the possibility of using ASCS lists of farmers as a sampling source. I am sure the appropriate panel here will want to consider this in connection with our relationships with ASCS. I am convinced that it is going to be necessary to use every possible source of lists of farmers and others as a basis for expanding probability sampling on both large and small surveys. Screening additional segments is a costly way to build lists and using the 3 or 4 segments contiguous to the present enumerated segments will not produce large enough lists to meet our needs. Work in the area of designing surveys on a probability basis working toward the combination of enumeration and mail particularly for the large surveys should be <u>pushed vigorously</u>. We cannot continue for many years to have two separate systems and neither can we afford to give up mailed surveys as a basis for meeting the needs for most of the reports demanded of us as well as for local data. This doesn't mean that mailed surveys must necessarily be handled as at present, but they are necessary. A workable combination seems the only solution and we have not yet begun on that. More of our resources of personnel and money need to go in to finding answers here. This ties into the remarks by Dr. Cochrane this morning.

With regard to objective yields, work is moving along in line with the recommendations, although slowly. The samples have been increased in the operating States, work continues on developing improved forecasting models for individual States, and there has been some expansion in the crop coverage. Considerable effort has already gone into refining and improving corn and cotton models. Sorghum grain investigations have been continued along with soybeans and wheat. Some preliminary work was started at Ames to define and develop ways of measuring production of pastures. Objective yield surveys on certain fruits and nuts have continued in California, Florida, Michigan, New York and other States. We expect to begin objective yield research on sour cherries in Wisconsin, Pennsylvania and New York this year.

Nothing new has been developed in the last year on the explanation of differences in our current levels of yields and those shown by the objective results in some States and for some crops. This is an area where studies should be pushed forward vigorously. Such differences must be explained if our yield levels are to be shifted to those indicated by the relatively small objective yield surveys. I am not saying either level is right, but before we make sharp changes, we must know the reasons for differences and be able to explain these to our public.

Funds have not permitted the expansion of the price research to additional States but the research program in Ohio has been continued with some modifications aimed at developing additional information needed if such a program is to be put into operation generally. The main change has been to instruct a randomly drawn sample of respondents in two Crop Reporting districts as to what information is wanted and the concepts involved. The reports from these respondents have been compared with the averages from enumerated questionnaires. Without going into technicalities, the results of the comparisons have been encouraging and give promise that in some areas the mail questionnaire, if used with more instructions and personal contact and follow-up than has been characteristic in the past, may do nearly as well as the enumeration. In fact, we are seriously considering using this approach to collect monthly prices received information for the whole State of Ohio, for grains, as a starting point. With regard to the items for which prices are being collected, there is a feeling among our price people that the complexity of the field requires the collection of data on more items rather than fewer. Nevertheless, continuing scrutiny is being given to the number of items for which prices need to be collected as well as to specifications.

Recommendations of Panel A on additional services needed were very general but it might be appropriate here to mention that we never seem to satisfy all the demands. Probably this is a healthy situation for SRS. Satisfied customers are usually <u>quiet</u> customers and we need people pushing for more and better service to keep a healthy, growing organization. This reminds me again of comments by Dr. Cochrane this morning. Criticisms are to be expected by any organization, particularly in the field of service such as that performed by SRS. Constructive criticisms bring progress. Some of the unmet demands are indicated by the needs brought up in the appropriations hearings by members of the respective committees. Examples are,

further expansion of cattle on feed reports, quarterly pig crop reports for more States, expansion of the sheep and lamb reports to additional States, market flow information on more vegetables in more States, extension of the report on cane and bushberries now being started in Oregon and Washington into more States, and so on. More recently pressure has been increasing for more variety surveys, particularly on wheat and barley. I should also mention the report on Timber Price Reporting recently submitted to the two subcommittees on appropriations as the result of a specific direction and allocation of funds in the 1962 appropriations. There are many other evidences of unmet needs.

The Panel A report also points up the need for a general broadening of the areas of the services we perform for other agencies, particularly in the economic data fields. These cannot be met generally by adding a few questions to the June and December enumerative surveys. The wage-hour survey and the consumer expenditure survey, (which I almost hesitate to bring up here) are examples of what can be done if other agencies have the funds to underwrite surveys in the field of agriculture.

Panel B - Cooperation and Relationships

Here again recommendations were classified in 4 areas: (1) problems of relationships with respondents and users, (2) administrative problems, (3) resources and their allocation, and (4) communications. Many of the matters related are of a continuing nature which cannot be solved by a specific action at any one time but must be worked at constantly. I can assure you that such is being done. Problems in relationships with respondents and users of data are faced every day. We continue to work towards better questionnaires, improved reports and more active participation in meetings with both respondents and users. A number of State offices have increased the frequency of TV appearances and radio broadcasts. Our Information people continue to help in improving the reports. Several special or spot releases have been prepared for use in field offices to plug particular surveys. Another recent example is the visit by John Baker to the Texas and Oklahoma offices where he spent 2 days each in information workshops. He wants to do more both in the field and Washington as time permits. Washington personnel and those in many field offices are participating in more industry or commodity meetings than ever before, explaining the program, answering questions, assisting in determining needs, etc. This has to be continued.

In the area of administrative problems, a procedure has been developed to take advantage of outside funds which cannot be handled through the State fiscal system. A trust fund was set up to use a small amount of money provided by the Tomato Growers Committee of Texas to assist in financing the weekly tomato planting report for that State. A similar procedure will probably be used to take advantage of funds promised by the Cherry Producer's Cooperative to underwrite the proposed objective yield research on sour cherries in Wisconsin, Pennsylvania, and New York. The agreement under which such funds are used must be carefully written to assure that the industry furnishing funds gets no special privileges or advantages over

others and that all information developed is equally accessible to all. Each proposal must be evaluated on its own merits, but our general preference is still to handle these funds through the State cooperator, particularly where the project relates to State or RMA matched fund programs or where the interest or work relates to a single State or locality.

I know problems still exist with regard to resources and their allocations. This is a continuing one and is not always associated with money. During the past year shortage of personnel, largely technical, has been one limiting factor. I expect if we were to take a poll on the subject of resources and their allocation today, it would show up as a bigger problem than at Biloxi and not because of financing. Perhaps the best answer to the problem is to develop a system of work measurements that will yield data on man-hour requirements for each and every facet of the total Federal program. There are many reasons why we have not been able to get very far in this area and I suspect that with the advent of ADP we will have a whole new set of problems. There seems to be a suspicion in some quarters that we in Washington are relying on the use of State funds to help carry Federal programs. Nothing could be further from the truth. We do recognize, however, that in most cooperative offices the combined programs can be accomplished more economically than if each program were handled separately. This is one of the basic reasons for a cooperative program. It is almost impossible to break down these joint costs. Our budgeting of Federal funds is on the basis of man-years that can be supported by those funds rather than on the number of workers in an office.

I think it is safe to say there has been some improvement in communications between Washington and the field and vice versa on cooperative programs in the past year although there have been instances where they could be better. This again is an area where both Washington and field personnel must be constantly on the alert and not assume that the other fellow always knows, or that various proposals are equally known in the field office concerned and in Washington.

Panel C - Recruitment, Promotion, Training

The report and recommendations of this panel are so broad that I find it a little difficult to organize my comments, but let me start out with professional personnel. Basically, the backgrounds we need in men were very well covered by Joe Ewing's report on recruitment. Recently there have been some discussions with the Civil Service Commission and others concerning the entrance requirements for Agricultural Statisticians. They have recently issued new qualification standards for the beginning levels of GS-5 and 7. These are as follows: A full 4-year course in an acredited college or university leading to a Bachelor's degree with (1) 15 semester hours of statistics (or a combination of mathematics and statistics of which at least 6 semester hours must be in statistics) or (2) for Federal agencies having formal supplemental education and training programs designed to provide 6 additional semester hours of training in statistics (or their equivalent) during the first 3 years of employment, the requirements are 9 semester hours in statistics (or in mathematics and statistics

provided at least 6 semester hours are in statistics). With our in-service training course given by the University of Florida modified somewhat we can qualify under the second standard which has the same basic statistics requirements as at present. We may have to make 2 three-hour courses by a little addition to the present in-service training course given by the University of Florida. Thus we will have in the future two possible entrance standards to apply. In addition, the Commission has raised the minimum requirements of the subject matter field to 15 semester hours. For us, this means Agriculture, Agricultural Economics, or other subjects in the field of agriculture. This is going to bring some changes in our recruiting.

It was recommended that we develop a brochure which would emphasize and communicate the advantages of the Agricultural Estimating work. A brochure has been developed for Agricultural Economics, covering Agricultural Economists and Statisticians. This does not fully meet the need visualized by the Panel but it is a start. I believe the plan is to supplement this with a picture story on SRS and some States will probably wish to develop a leaflet as an additional supplement. MOS personnel have been visiting certain Land-Grant Colleges recently to encourage more students to take the Federal Service Entrance Examination and to emphasize the need for curriculum changes in some colleges so basic requirements can be met. Even with this increased effort, State Statisticians should intensify their contacts because MOS cannot contact all possible sources of personnel and their time has to be divided between ERS needs and SRS needs. The competition with Agricultural Economists, with all due respect to my friend, Nate Koffsky, is still with us. Appointment processes have also been simplified to some extent. Pre-employment checks are no longer a condition of employment. I am told there may be further streamlining in this area. So far, we have not been successful in conducting examinations for statisticians on the campuses nor has the process of processing FSEE papers been speeded up, but this conference will give the opportunity to explore these and other possibilities further.

In training, I believe the record speaks for itself. Sixty-five statisticians in grades 7, 9 and 11 are enrolled or have completed the Florida correspondence course. If our budget situation permits, we plan to nominate 40 or more statisticians for this course in June. Two statisticians have completed the more advanced course in statistics and math at North Carolina State. There are currently two men at N.C. State and two at Iowa State taking advanced work and four more have been selected for enrollment in June. In-service training has been approved for individuals in other areas also, such as T.A.M.; CSS-Middle Management Institute; Dale Carnegie Course; Reading Improvement; Statistical courses in the Graduate School and George Washington University; and possibly other areas I don't recall. I am sure I have not adequately covered in-service training of field personnel but I feel opportunities are possibly greater in Washington than in most field offices. This is particularly true for the in-service seminars such as the one just completed for all SRS Washington professional personnel on ADP. It is hoped that similar opportunities on ADP can be developed for field personnel.

In the clerical personnel area, the Civil Service Commission and some of the Regional Civil Services offices are now holding examinations to test comptometer ability. The groundwork for this testing procedure was, in fact, being laid at the time of the Biloxi Conference. However, we have had little indication thus far that it has brought any substantial improvement. I wish I could say that plans were laid for resuming the program of bringing supervisory clerks to Washington for specialized training and for providing for on-site exchange of ideas with similar employees from other field offices, but I cannot. This suggestion and the recommendation for visits to other field offices are no further advanced than at the time of the Biloxi Conference. We also need to give more attention to in-service training for some of our clerical personnel.

For enumerators, it is believed that we have gone about as far as we can in simplifying appointment procedures, at least until there are further modifications in policy and procedure at the Department level. The enumerator manual was completely revised a year ago and a sizeable portion of it must be revised once more according to Bill Evans. As an aid in training enumerators, projectors and tape recorder playback units were provided to additional State offices. At present 25 offices have projectors and 18 have playback units. Only limited progress was made in developing visual aids. In 1961, for the first time, a part of the training for the June Enumerative Survey was a sight-sound program. Increased emphasis was also placed on field supervision by both State Supervisors and supervisory enumerators in 1961. Instructions specified that each enumerator should be checked each month on objective yield surveys. Further emphasis is planned for the 1962 surveys.

Panel D - Washington-Field Communications, Workload

There has been no major breakthrough in the transmission of data or reports from Washington to the field and from field to Washington. The speed-up in communications has been limited to a small expansion in the use of telephone, telegraph, or airmail service when requested and considered practical. There has been much discussion of rapid data transmission, particularly in connection with the possible use of ADP equipment, but a system for use in SRS has not come out of these discussions. There have been attempts to get out notices of changes in non-speculative data more rapidly but this hasn't always been successful. At present, some of these methods or proposals have to be considered almost on an individual State basis because the needs and urgencies vary greatly by States and present funds do not permit the adoption of one uniform procedure where costs would greatly increase. This whole area of communications is constantly under review. The Department has a study group looking into the handling of mail within the Department. Thus far the changes which have taken place in handling mail because of the reorganization have not resulted in speedier handling of mail essential to the Crop Reporting Board operations. In fact, problems have increased.

In the matter of flow of information on policy and developments, the Washington office has sought field office recommendations particularly in the area of modifying or initiating programs. A number of examples could be

given. This meeting here following about a year after Biloxi is evidence of more frequent conferences and there have been several times in the past year when a few key members of the top field staff have been called in on special matters. I agree that Washington staff members should make more frequent trips to field offices. Numbers and funds are a limiting factor. There has been a change in the Staff Letter but perhaps it still does not include enough on general policy matters. Since it is issued only once a month, it is doubtful if it can beat the "grapevine" very often. I think we have some pretty good recent evidence on this. With regard to training materials for new technical personnel, we have plans for revising Miscellaneous Publication 703. We have long felt the need for revising or rewriting this publication. Mr. Krause, recently from the Wisconsin office, has been assigned to the project and is to make it the first order of business. He will need a lot of help from others, particularly those in the Washington office because obviously he is not in position to write the various chapters. We will welcome suggestions from any or all of you here.

On field contacts, I said earlier that a number of the field offices and members of the Washington branches are more active in attending and participating in meetings of trade and producer groups than was evident a couple of years ago. More needs to be done.

The first recommendation on workload suggested that a committee be established composed both of field and Washington personnel to review and reappraise the need for and usefulness of each series of estimates and recommend adjustments and changes. Such a committee has not been established but each Branch has the responsibility for continuous review of the reports in its area. In connection with census revisions, a number of changes were made. Estimates for 15 vegetables were dropped covering 8 States and 15 crops were added covering 12 States. In all, the number of drops equalled the adds. Pear estimates were discontinued in 14 States; grape estimates in five; apple estimates in one, and peach estimates in one. Horse and mule estimates were dropped in all States and some States dropped estimates of certain grain and forage crops. It is difficult to visualize a committee making much detailed progress in this area unless a great deal of time were spent. This is, however, an area where we need to devote more time searching out those items which could and should be dropped.

Considerable progress has been made in the improvement of forms, keeping in mind the factors listed by the panel. Most of these changes were pretested in at least a few States before being put into operation. Important labor saving changes have been made in the area of record retention and transmission through the micro-filming procedures adopted and the equipping of more offices with Photo-rapid or Verifax machines. This is a continuous process and emphasis in this area has increased the awareness on the part of many of our personnel as to the importance of forms. Major improvements on a broad front cannot be accomplished unless all personnel working with the various forms are continually scrutinizing their functions

or needs. Questionnaires are also coming under critical review with a view to avoiding repetition, recurring questions, etc., in order to minimize reporter irritation. The potato stocks questionnaire is an example.

Panel E - Future Data Needs and Future Research Requirements

The panel dealt first with several points on future research requirements. Research has been continued on objective yield measurements but there has been little expansion to additional commodities. As indicated earlier, plans are being developed for a project on sour cherries in Wisconsin, Pennsylvania, and New York. While the tomato and celery projects in Florida, Texas, and California do not make use of objective yield measurements, the type of information provided is meeting with great demand and there are considerable pressures to expand this type of service to additional crops and States. Ultimately it may be desirable to extend these to weekly forecasts of production and this would require yield data. The Florida Citrus project proved its worth following the December freezes when the special damage report was issued. The manager of Florida Citrus Mutual told Mr. Newell that this one report was worth all the money which has been spent in the past on this project. A similar report has come from California in regard to the Raisin Lay report.

The recommendation that it may be possible to eliminate objective measurements for determining final yields where the results are not significantly different from those obtained by mail or from other lower cost sources of yield indications has not been given much consideration as yet. Efforts have been put largely on improving objective yield measurements and attempting to determine true yield levels which must be the first consideration.

A number of us have long been aware of the need for research in the problems of non-sampling errors in our various surveys and the reasons for non-response to mailed surveys. Such research should have had top priority before this but the available funds have been otherwise committed. However, we are planning to begin research in both of these areas this summer, assuming the funds can be found. We hope such investigations will also lead to devising ways to increase response.

The problems of improving the Rural Carrier method of sampling are well recognized. There are some, however, who feel it would be more profitable to devise better sampling frames rather than attempt to reduce the bias of the Rural Carriers Survey through more emphasis on stratification. In any event, recent developments with the Post Office Department may result in loss of most of the cost advantage in Rural Carriers distribution. It is evident that we are going to have to pay postage on cards distributed and picked up by Rural Carriers as soon as the financial arrangements can be worked out. We had originally hoped that this pay arrangement would give us the right to insist on better distribution, better returns, etc., but these hopes are fading. We haven't given up yet and much will depend on the returns on the June Livestock Survey. There is a great reluctance on the part of the Post Office Department to initiate instructions which

require the Rural Carrier to do any more than drop the card and pick up those returned to the box by the farmer.

Increased attention has been given to the indications on changes in numbers of farms. The results of the June Enumerative Survey were used along with other information in arriving at the estimates for the last three years included in the report recently released on numbers of farms and acreage of farm land. Although the sampling errors are rather large for some of the individual States, the error for the 16 so-called operating States as a group was 1.6 percent for resident farm operators and 2.2 percent for farms reporting hogs. A disturbing fact is a preliminary report from Mr. Hurley of the Census Bureau based on their 1960 supplementary enumeration which shows a much larger decrease in farm numbers from 1959 to 1960 than any data we have. The census report will show a decrease of about 450,000 forms; our estimates show a decrease of about 150,000. I mention this just to indicate we still have problems and the need for further research in this area.

On Automatic Data Processing research you will be hearing from Mr. Simpson this afternoon. I will say nothing more than there is still a lot to be considered in this area before we move very far into committing the whole of the Crop Reporting work or any major part of it to ADP.

The situation on future data needs has not changed greatly in the past year. We have expanded our services in a few areas notably cattle on feed, caneberries, Minnesota-Wisconsin milk price series, etc., but some new demands have been added. I have dealt with a number of these under my comments on Panel A. In addition, the long list of others are still with us. Project A of the long range program still has top priority within the Department in the requests for increased funds and probably will until all States are on an operating basis. A few of the more pressing individual commodity demands may also be taken care of in an individual year as has been the case recently, but no widespread breakthrough in the commodity area seems likely in the next 2 or 3 years.

Continual thought is being given to the concept of State versus Federal financing. This comes up in every project suggested and is now further complicated by the consideration of so-called private financing, in part or in whole, of certain projects.

I have already touched on the review of current series of estimates to determine whether certain items are still of sufficient significance and use to continue. In this connection such a review often points up the inadequacies or deficiencies of a particular program. An example is our employment and wage rate data where we are faced with determining what can be done to firm them up to make them more useful for many purposes not envisioned 5 or 10 years ago. The replies coming in from the various State Statisticians indicate a wide range in the uses and needs and the proposed methods for dealing with needed improvements. Practically all would require additional financing. I believe our contacts with the Department of Labor are shaping up in a way to encourage closer cooperation

at the State level between the two agencies and possible use of information collected by Employment people.

Panel F - Organization, Staffing and Administration

Some of the recommendations of this panel have been affected by the organizational changes which have taken place since our Biloxi meeting. Also a number of recommendations were in areas covered by one of the other panels. Such recommendations as I have already commented on I will not cover again. Of course, the situation with regard to the then Deputy Directors has changed, although the areas of responsibility of the Director of Field Operations Division and the Director of the Agricultural Estimates Division are similar to the responsibilities formerly held as Deputies. The Director of Field Operations now has a Deputy Director to assist him in visiting field offices and appraising workloads. He is also getting up a position of an Assistant to the Director which should help in this area and may permit Bill Evans to get out more frequently. I can report no such building up in the Office of the Director of Agricultural Estimates where it seems to be a little more difficult to get funds. The recommendation on grade levels of the Professional Field Staff has also been implemented in many areas. I am glad to report that a recommendation has gone forward to the Department requesting a higher grade level for the man in charge of quite a group of States. Dr. Trelogan may wish to say more on this later.

With regard to the policy regarding lines of communications between field offices and Washington, and Washington, D. C. and field, this has been spelled out in SRS Notice 7 and C.E.M. 1681. Thus far we have heard little comment on how this is working out, but if there is need for further clarification or ideas for improvement we would welcome suggestions. I would say that progress has been made on many of the suggestions of this panel on staffing. We are all concerned with the length of tenure in the second and third positions in field offices and recently we have had reason to become concerned with the length of tenure in certain positions in Washington. If we face up to a strong promotion program, with equal chance for advancement for those who show leadership qualities regardless of length of tenure, and the need for broad, varied experience, it is difficult to leave the above average man in one spot very long particularly with vacancies coming up in the higher grades rather frequently. These are the men who will be carrying on in the future and to do the best job possible they need broad experience.

The suggestion that C.E.M.'s Specials and Instructions be combined into one series and indexed annually seems nullified to a certain extent by the changes made by SRS Notice 7 and C.E.M. 1681. If we can follow a fairly rigid policy regarding the content of each of the three series as now operating the need for indexing may be eliminated. Perhaps there is a need for codification of the past C.E.M.'s that are still pertinent. Also we have a new problem regarding Agricultural Economics Circulars and how they fit into an effective issuance system. This whole area of issuances should be thoroughly discussed again at this Conference.

In the area of Administration, I understand that an annual due date calendar for administrative reports will be issued in the near future. It is hoped this calendar will include reports required by MOS as well as the A.E. and F.O. Divisions. The matter of a loose-leaf manual on administrative procedures now seems to be a responsibility of the MOS.

Most of the other recommendations of this panel have been commented on earlier, but I want to point out again that this conference following a little over a year after the Biloxi meeting is evidence of more frequent National Conferences for Statisticians in Charge and top Washington personnel. This report also carries out another recommendation of Panel F which asked for a report on action taken on recommendations adopted at the 1961 Biloxi Conference.

In summary, I would like to say that the Biloxi recommendations have been taken seriously. A surprising amount of progress has been made which may not be fully evident until one reviews the recommendations and carefully documents the events of the past year. In spite of progress, some of the problems are still with us and need to be given serious consideration again in our discussions here this week.

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MOS AND GENERAL MANAGEMENT

By Charles F. Kiefer, Executive Director
Management Operations Staff
Agricultural Economics

Mr. Chairman, Dr. Trelogan -- Not often have I had the informal privilege to make as many new friends. I'm certainly glad to be here; to spend the entire week. I believe it's going to be a very great conference.

You will remember Bert Newell's comment about SRS and "go." This year when Dr. Trelogan was appearing before Mr. Whitten (he's appeared before him many times but not quite in the same capacity he did this year as your leader) -- this was the day Mr. Glenn was "going" -- in Bert's phrase. Mr. Whitten recessed the hearing in order that Earl Houseman could hold up his portable transistor radio to inform the committee as to the progress of "go," principally for Mr. Glenn but also for this Service. I thought it was a particularly fitting interlude in the SRS hearings. While the astronaut was coming back to earth, you with Dr. Trelogan were proceeding to "take off" a little more.

My connection with the Department traces back more than I'd like to admit. I don't look as old as I seem, I'm sure, but it goes back to 1934 and I was with you in the association of the old BAE. So in the intervening years, I've come to have an appreciation with your program and its contribution. I know where you have been. I think I have some small knowledge of what you have accomplished. With Dr. Trelogan's leadership these days, I think I also know where you are going -- at the local, at the State, the regional, and the National level. All of these levels of government are of vital importance to the creative potential of the Statistical Reporting Service.

I must also say that it's a very pleasant association to be in the same arrangement with Willard Cochrane, Nate Koffsky and Harry Trelogan. I find it stimulating, demanding, and rewarding and I say to you that you will find it so too. The program pace is quickening. We're having to walk faster, even run, to hold our present position.

The role of the Management Operations Staff for the conference, for the weeks since it's been organized, and for the months that lie ahead is to be "on tap and not on top." And my own personal view is that the test of this being "on tap and not on top" lies not alone in Washington but also in the field. As an old field man coming back to Washington, I have told my associates that we must face the field first and I think you know it.

This morning, Dr. Cochrane saved me a good deal of time in my remarks by discussing the organization of Agricultural Economics. You have already received in the mail the picture organization chart of Agricultural

Economics. I'll just hold it up to remind you. You have that in your own offices. On your table, there's a Departmental organizational chart with photographs of the organization Dr. Cochrane discussed this morning. I think this is a welcome addition to the pieces of paper under your glass and I commend it to you not only for the excellent photographs in most instances, but also there's a telephone number under each member of the Secretary's staff. So I would say that Dr. Cochrane pretty well took care of that phase of the work. Besides, you have a Washington telephone directory yourself, and you've had Washington visitors, or you've been in to Washington on Board work and you've picked up the rumors that have been circulating around the country and in the halls. What is there for me to say about organization if I narrow the field down? I think if you will look at these charts thoughtfully, and keep in mind what Dr. Cochrane has said to you, plus your own knowledge over the years, that these two charts add up to a current accurate picture of the organization of Agricultural Economics.

As part of the preparation for this meeting, I went down and played a few tapes of the Biloxi Conference of last year and so I know many of you by voice, if not by face. I learned from the Biloxi proceedings that a person has to be somewhat careful about the stories he tells, because in Emerson Brooks' immortal phrase ... "You check your stories with Mr. Dewey Boster, the Pennsylvania State Agricultural Statistician, for admissibility." I have not had the pleasure yet of checking my stories with Mr. Boster. I have some.

I did, however, get a tremendous lift from the letters that you sent to Dr. Trelogan and Glenn Simpson on the agenda for this conference. Let me say to you that I ran a tabulation on the subject matter content in the areas of my interests for discussion in this conference. I think you might be interested in it. I read carefully all of the 42 letters, and there may have been more. In the 42, travel and per diem was mentioned once. Employee relations was mentioned once. Information and public relations was mentioned five times. Workload and State office ratings was mentioned six times. Promotion policies and procedures was mentioned seven times. Communications was mentioned seven times. Washington field relations was mentioned eight times. Recruitment and training was mentioned twenty-five times. ADP was mentioned in nearly all as was the Biloxi Conference. This gave me some clue as to the significance in your mind as to the work MOS does -- and MOS as you know, stands for Merry Old Souls. Your letters also gave me some clue as to what might be your pre-occupations in seminar D this week, and perhaps with some of our side talks during the days and the evenings. I will just say this about these letters. This may come as a surprise to some of you. I would advocate, in another year, letting everybody see these incoming letters. They are a useful means of communication. They are a useful index, a barometer of the way in which you gentlemen around the country see your operations and your program, and you get to see your work through the eyes of your coordinates and your associates. You may say that you can't trust those people. You may not be willing to lean your neck out. I want to say to you that the door, I believe, is open for all ideas -- good or bad. It is my thought that nothing but good can come

from this interchange of professional opinion. You will discover, as John Buhl said, that most of your suggestions have been considered and included in the items that Dr. Trelogan, Mr. Newell, Mr. Simpson and Dick Smith, Earl Houseman, and the others placed on this conference agenda.

I would like to turn briefly to how we got to be a management operations staff, and to take you, as Dr. Cochrane did, into our confidence as to why we don't have a separate management staff in ERS and in SRS.

I would say to you that the origin of such a central staff lies partly in the experience of Governor Freeman when he was an active Governor in Minnesota; it lies partly in the experience that our friends in AMS have had in the years gone by in the amalgamation of several agencies; also in the Agricultural Research Service which took many of the scientific agencies and consolidated them in 1953, and to some extent in ASCS. This was a visible, firm effort on the part of Mr. Robertson, the Administrative Assistant Secretary, representing the Secretary to save money. And you, I think, can plainly see that if we had had to create another Stan Dorick, another Joe Findlay, another Wayne Dexter, another John Kaminski in another agency that this would have increased overhead. Joe Robertson, representing the Secretary, felt that this was an experiment that was needed here in the Department to see what would be the outcome of such a centralized arrangement. Now, in these conversations a year ago, I would not fail to indicate that we felt -- I felt -- that this was not a good idea for these two new Agencies. They needed to have the support of staff in depth at their immediate beck and call. My view was that a central staff would possibly represent a drain on Dr. Cochrane's time to have him concerned with day-to-day affairs of administration. It is my view that our whole purpose is to relieve men like Trelogan, Koffsky and Cochrane for the upward look, the looking out-and-beyond into the problems of agriculture and the Nation and not to be too concerned with the down-below detail workings. And I still believe this. And I am hopeful, and I continue to be hopeful, that my associates and I can somehow continue to keep the day-to-day operating matters in the field of administrative and general management in such a way that we go to them for decisions with the staff work done. So that they can come to a conclusion and a judgement based on a high quality staff job, so that they can get on with their important program business.

The management question in the field, however, was very vital back there a year or so ago as to what we would do about the needs of the State agricultural statisticians and economists in the field. They had been brought up under a variety of field office organizations. Whether you really joined up with any of them, is a matter of personal opinion. But nevertheless, the parent agency of the immediate past, the Agricultural Marketing Service, had developed and achieved a high degree of rapport with all of SRS State offices. The question came up right away -- Why don't you set up another field business organization in Ag. Economics? If you don't want to do that, why don't you contract with the Agricultural Marketing Service to do it? Or, why don't you contract with the Agricultural Research Service? Each of these agencies have a field business office that likes to serve its clientele. We had to reject the idea of creating an additional field

business office because it simply would cost more money. And we had to give this idea of central management a new updating of the cards, so to speak. We went into it with our eyes open. We felt firmly that we could do the job. Perhaps not as well immediately as our friends in the past had done, but we felt we had to give it a chance. Moreover, there was the question, as there always is, of scarce funds. Perhaps I should add one other thing. If we contracted with our good friends in AMS or in ARS, where in the pile of paperwork would your various actions be? Would they be on the top, in the middle, or on the bottom? I had to take the cynical view and assert that in all probability and logic ARS would serve its ARS people first, and that AMS would serve its AMS people first. That's too harsh, I realize. It is not unreasonable, however, to expect that SRS and ERS would get their service after the parent agency had serviced itself. Now we have a little business of procedures here as well. The question of the financial accounting arrangements that we would require for our operations and the performance of those procedures and requirements in a multi-functional set of field offices. We just did not feel that we could achieve the degree of control on behalf of Koffsky and Trelogan in that kind of sub-contracting arrangement. We realize we had to sacrifice some values in this rapport to which I have referred. But we made the decision.

In a sentence, I wish you would consider MOS a label, but consider the people in MOS at your service, as your staff, your helper in the field of our competence. I urge you to keep in mind that the relationship between Cochrane, Koffsky, Trelogan and Kiefer is an effective one. It's a pleasant one. We meet together weekly. We discuss things that are of concern and we go on about our business. And while I report to and am responsible to Dr. Cochrane, I am accountable to and seek to be responsive to Harry Trelogan and Nate Koffsky; indeed, to all three. And so does everyone in MOS. While the Scripture says no man can serve two masters, the Scriptures are silent about three.

Now I'd like to say a few words in the moments I have remaining about some of the management developments in the Department which I know you'll be interested in. The first is MODE. MODE means Management of Dollars through Employees, not Monkeying around Deal Elephants. And this has to do with the mechanization through ADP of the payroll. And more than that--and I'm sure you have read the USDA Newsletter that comes around--and you have some passing interest, perhaps more than passing interest, about how this is working out. There's a task force and staff active at the present time behind the lines which is studying in depth the forms and processes of personnel management, and payroll administration as to how these repetitive recurring clerical routines can be committed to the computer with no loss of organizational effectiveness. This will take some doing for Department staff of the size of some 85-90,000 persons. The outlook is that the first batch of 10,000 employees will begin to be processed at the computer in New Orleans sometime early next year. The Secretary is very optimistic on the prospects of this new managerial endeavor in this new enterprise and, in my judgement, with the talent and the support that this effort is receiving, it will succeed. How will it affect you? I would say in the SRS field force that you will have merely a different place,

and perhaps another format to follow, as to where you will send your Time and Attendance reports, and where you will send some of the phases of your personnel papers. It is Joe Robertson's and John Cooper's intention, I am sure, as the problem definition proceeds and is more fully developed to keep you folks in the field who are interested fully apprised. This Robertson is a vigorous, humane, refreshing person. He's a liberal and a no-nonsense guy. And one of the most refreshing things about his regime in the position he holds as Administrative Assistant Secretary is that he is pushing the agencies to fulfill themselves instead of the agencies pushing him. And this change is one of the more invigorating experiences of my time.

I'd like to say another word about the Personnel Policy Review Meeting in Philadelphia which some of you attended in the field as well as Washington. And out of that meeting you may have already observed in your mail some implementing releases from Carl Barnes' office signed by Carl himself, a very energetic and aggressive personnel director. And the aftermath of that meeting, in my judgement, with Robertson's support and that of the Secretary, is bound over the months and years that lie ahead to raise the standard of personnel administration in this Department. I have high hopes in this regard and I think that you would be justified in having a high restrained hope yourself.

Now this ADP work in the Department is burning like a brush fire. It is burning not only in SRS and ERS, but it has been burning for a good many years in ASCS, in ARS, and elsewhere. And the fundamental processes of agency and employee reorientation which ADP induces has not yet brought a vast disillusion to anybody in the Department. On the contrary, there are positive gains. And the potential, in my judgement, in Ag. Economics for the use of ADP to advance economic research, to advance the utility of the statistical fact finding processes of this Service are immense.

Now I want to say one other thing. We sent you our MOS work plans. We will continue to do so if you want us to. We're going to get going on an audit program before long. We are also going, I hope, to increase our field visits. We hope that you will be responsive to the Administrator in the awards area. I hope you will hear from Stan Dorick about the way in which he is mounting a full scale effort on the procedures system; and from Joe Findlay and Wayne Dexter and John Kaminski on what they are doing in their respective areas.

How does MOS look today? Your views, of course, in my judgement are crucial. My view is that it is shaping up real well. And the best that I can say about my associates, who are here today in this room with me, is that if I had to do it again, I would select them to join me in this work. With your permission, I would like to present them to you . . . Wayne Dexter, Stan Dorick, Joe Findlay, John Kaminski, John Baker, Sweeney Morgan and Joe Ash. And I wish you would join me in giving these men a hand. Thank you very much.

I want to say we intend to make a contribution to this meeting, and to Dr. Trelogan's leadership. We want to be "on tap and not on top." We want to be used by you.

It is a pleasure to be with you.

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SRS ACTIVITIES IN CIVIL DEFENSE, RURAL AREAS DEVELOPMENT, AND CENTENNIAL OF AGRICULTURE

by S. R. Newell, Deputy Administrator
Statistical Reporting Service

If there is a job that really needs doing, give it to a busy man. A tired old cliche, it's true, but in the 36 years that I have known Ag Estimates it seems to me it must have been the principle on which a good many Secretaries of Agriculture and administrators have acted when there was a pressing need for prompt and positive information and action on a broad front.

I am fully aware that our organization has frequently been "put" upon -- that it has "absorbed" added responsibility as well as a goodly measure of criticism and complaints with little sympathy or recognition in the way of vigorous support for increased funds necessary for adequate staffing.

These things I know, not as an administrator, but as a P-3 and P-4 statistician that burned a sizeable amount of midnight oil pecking out FA's (Field Instructions) at home on subjects such as correspondence lessons for newly employed junior statisticians, dreaming up tests for county tabulators (and some of them probably were dreams by the time the clock said 2 or 3 a.m.), and spending two-thirds of the year in field travel on trains that were not air-conditioned -- some of you know what I'm talking about and some of you know that it wasn't easy to carry on the kind of schedule we were pushed into at a P-3 or P-4 grade, when we also had to break in some of the new P-5 or even P-6 appointees in other agencies with which we had to work. Yes, we had grade troubles then, too, but it was only an occasional one or two who would give up and go on to another agency. Why? I wonder if it could have been a bit of pride and satisfaction in doing a job we felt was important -- pride in a professional, career position in a respected organization with a long record of objectivity and unquestioned integrity. I never tried to completely analyze my own reasons, but it was something beyond money because plenty of us were sorely tempted by higher paying jobs that were considerably less demanding. Whatever the reason or reasons, we stuck. We fussed about grades, the stupidity of some of the new, high priced appointees, we griped, and we joked and went on and got the job done. Our griping, as usual, was about 90 percent internal: we have always been our own severest critics.

This session here at Denver is largely for the purpose of taking a look at ourselves -- seeing what's wrong and what's right and trying to figure out ways of doing the job better. If it follows the usual pattern, the uninitiated or those not familiar with Agricultural Estimates traditions will probably conclude that this is the griping-est bunch of people they have ever seen. They would probably conclude that the field offices are not on speaking terms with Washington and vice versa, but that will be just because they don't know this outfit. Eleven years ago when I returned to Agricultural Estimates, I made the statement that if this outfit ever

stopped griping, I would know something was dead wrong. As of now, I figure everything must be going just fine.

Now, why all this ancient history in dealing with my assigned topic? It just seemed to me that it might be a good backdrop before I start talking about Civil Defense, Rural Areas Development, and the Centennial -- all jobs that have to be done very largely as extra-curricular activities, for which up to now, at least, there has been little or no additional allocation of funds or personnel to take care of the increased load.

CIVIL DEFENSE

Looking at the Civil Defense responsibility first, it would seem that our responsibilities have been considerably modified since the reorganization. The Statistical Reporting Service, as the principal source of basic agricultural statistics for the country, is assigned responsibility for obtaining and supplying agricultural statistics necessary to support defense planning and emergency operations. (See page 8, par. 18 of Secretary's Memorandum No. 1489.) To appreciate the full significance of this short statement, it is necessary to look back to the summary of USDA's defense responsibilities and note that there are at least a half dozen of those responsibilities which will depend directly upon adequate and timely crop, livestock and storage information. It has been and will continue to be the policy of the Statistical Reporting Service to provide the Special Assistant to the Secretary on Defense and the USDA National Defense Board with as much information as possible from records presently available and, when necessary, carry out special surveys as requested and financed by the appropriate defense agency. For example, Trienah Meyers of the Special Surveys Branch is now negotiating with the Defense Department on the conduct of a survey to measure household food supplies. A considerable time of a number of the members of the Washington staff has already been consumed in meetings and planning with the various Defense units in Washington.

From the standpoint of our field offices -- and this is where your principal interest will lie -- you will note that each statistician is designated as a member of the USDA State Defense Board. In this capacity you will represent Statistical Reporting Service and lend all of the advice, counsel, and assistance possible within the limitations of the facilities presently available. If the State Board determines that additional information is needed that will require special surveys or extended analyses, you as the SRS representative will discuss the problems with the State Board, advising them with regard to methods, costs, and so forth, but you may not commit the Service to the expenditure of additional funds for the use of manpower beyond that which you would ordinarily expect to utilize in meeting the usual requests for data and analysis.

There are a few special cases which should be mentioned. The Agricultural Marketing Service has requested the assistance of SRS in a few cases. In six States the statistician or a representative of his office has been

designated to assist AMS as Food Management representatives on the State Board, and in these cases they will fill a dual responsibility. The six States involved are New Jersey, Wisconsin, Nebraska, West Virginia, New Mexico, and Wyoming. In Kansas the State Statistician also serves as Deputy Chairman of the Kansas Defense Board. In Washington the State Statistician is also Alternate Primary Agency Representative for the State of Washington, and the State Statistician in New England fills the same position for the State of Massachusetts. In accordance with the understanding between Administrators for AMS and SRS, these men will receive notices and instructions direct from the AMS and will carry on the same duties as assigned.

I want to call particular attention to section e (entitled "Pre-Emergency Planning"), paragraph 27, page 13 of Secretary's Memorandum No. 1489. You will note that the Chairman of the County Defense Board is made responsible for collecting and reporting data needs to support the defense planning in the county. If this responsibility involves the collection of information that falls within the responsibilities of SRS, you will note that the County Chairman carries out his responsibilities under the direction of the Chairman of the State Defense Board. As a member of the State Defense Board, you should be alert to the problems of overlap and duplication with the SRS' responsibility in this area.

RURAL AREAS DEVELOPMENT

Turning now to the Rural Areas Development Program. I believe all Statisticians have been notified that they are designated as members of the Technical Panel in their respective States to assist, advise, and counsel with the appropriate State agency, as requested, in the formulation of RAD programs. Several questions have been asked by State Statisticians regarding the types of surveys and obligations for furnishing additional data mentioned in F.O.M. 1-62. The Statistician may indicate or suggest types of information which he believes would be necessary or useful in a comprehensive analysis of a particular situation and would be expected to advise and consult on the probable requirements and costs for obtaining such information. He could not nor would he be expected to conduct a survey of any significant proportions unless the necessary funds and facilities could be furnished by the State Board or other appropriate agency.

As a member of the Technical Panel for the State, the Statistician would be expected to provide all the information possible within available facilities that would assist the State Board in reaching a decision as to the need for a redevelopment program and developing the necessary plans and proposals for submission to the appropriate agency.

1962 CENTENNIAL

The USDA Centennial Committee has made plans for local, regional, and national activities. Business, industry, and civic groups will join with

farmers and farm organizations in observing the 100th anniversary of the establishment of the Department of Agriculture. Publicity will be supplied by the release of USDA Centennial materials. An observance of particular interest is the 3-day World Food Forum, which will begin in Washington on May 15, 1962. This will mark the official opening of the Centennial celebration. The Forum will highlight the role of agriculture in international affairs. For this occasion international agricultural authorities and U. S. leaders of science, agriculture, industry, labor, education, and communications, land-grant colleges and universities will be invited.

SRS is collaborating with the local celebrations and in some States has already started to work with State people. Joe Ewing is here and might want to add something with regard to what they are doing in Illinois. We are still hoping to get our Centennial volume on the agricultural estimating service out this year. Two of the three sections are about completed. One that Walt Ebling finished before he retired has been mimeographed and copies distributed for comment and criticism. I believe Emerson Brooks has another in draft form that is about ready to go. Another feature that is in the making and will be available soon is a new movie -- the title of which is "Alice in Numberland." This, I think, is a very attractive movie with a consumer slant and should get a good reception.

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AMA MATCHING FUND PROGRAM

By Robert P. Callaway
Agricultural Marketing Specialist
Matching Fund Program
Agricultural Marketing Service

I appreciate the opportunity to participate in this conference. By and large, you statisticians have been a progressive group and the program you have underway here is in keeping with that tradition. I recall at one time some of the commodity marketing specialists in the Department needled you into changing the basis of reporting certain price series. I believe that the series you carry relating to on-tree fruit prices came about in this way. But on the whole, you have been forward looking. The topics you have selected for your work groups are really intriguing, and I presume place you in the proper orbit.

My work with the Matching Fund Program, as most of you know, has brought me in contact with some of the problems you face as an Agency, particularly in your cooperative relationships with State Departments of Agriculture. It seems that whatever work I do, I become involved in one way or another with crop and livestock data. As Dick Grant indicated, I was a County Agent at one time. My first assignment was to administer a county AAA Corn-Hog Program. That experience made me acutely aware of the value of good county data. We had plenty of trouble trying to reconcile the quantities reported and documented by farmers with the assigned county allotments, based on the statistician's data. I understand that a similar problem exists today.

A few years after my County Agent days, I was assigned to work on Federal order programs for fruits and vegetables. This association drove home the importance of accurate production forecasts to government and industry alike. Complications in the operation of these programs resulting from forecasts which occasionally were rather wide of the mark, no doubt hastened the advent of objective estimating procedures with which the Matching Fund Program has been so closely identified.

There isn't much need for us to dwell on the value of good crop and livestock data to the agribusiness complex and the contribution which a marketing data program makes toward efficiency in marketing. But I do not believe these benefits are adequately understood. An experience I had coming in on the plane yesterday may make the point. My seat-mate was a banker from Eastern Kansas and our conversation gravitated to the problems of agriculture. This conference came up in the discussion and I found out to my surprise that he had never heard of the Kansas office. He was a banker in an agricultural community, so I do not know what all this implies. I am aware of the hazards of drawing inferences from small samples.

My experience leads me to believe that many farmers and representatives of marketing agencies are not enthused about crop and livestock data. There are those who argue that the publication of estimates plays in the hands of the big buyers. And this viewpoint apparently is reflected in some State legislatures, if the meager financial support given State and local data programs is any indication. So I think that a case could be made for an educational and public relations program. We have tried to encourage this approach and have made some headway in a few States. We recently initiated a matching-fund project in Missouri which looks in this direction. The goal is to get the State Department of Agriculture, Extension, Experiment Station, and the Statistical Reporting Service to work closer together in analyzing, projecting and providing marketing data needs.

Granted that a need exists for expanded and improved State and local data, I believe that it is appropriate to inquire how these needs are to be met and what relationship the matching fund program should have to this effort. I hope that I can throw some light on the latter point.

In talking with a number of statisticians, I have noted some concern about the future role of matching funds in their State programs. It is only fair that you have a clear-cut and consistent policy framework to guide your planning efforts. I believe that such a policy statement will be forthcoming, but in view of recent personnel and organizational changes relating to the matching fund work, this will take some time. The laying down of uniform requirements for data projects will not be easy because of the diverse situations found in the different States. I hope that some ideas and points of view will evolve out of this conference which will be helpful to the people responsible for policy formulation. We have relied on your judgement to a large degree in advising the kinds of projects that would be most beneficial to the respective States. It is my belief that this confidence in your recommendations will continue.

To help orient the work group which is discussing this subject, it might be in order for me to lay some background regarding the direction we have been trying to move with the Matching Fund Program. In approving new projects, the tendency has been to favor those which would have the effect of improving the organization of marketing work in the States. Iowa and Missouri are recent examples where we have approved projects designed to expand and strengthen newly created marketing divisions. Rather substantial allotments were made in both instances.

Another criteria has been the extent to which a project broadens the base of marketing service work in a State. This has meant encouragement of projects in such fields as improving marketing efficiency. We take this as being within the mandate of the Agricultural Marketing Act and it has the support of our Advisory Committee, made up of Commissioners and heads of Marketing Divisions.

At its last meeting in November 1961, this Advisory Committee took up the matter of State and local data projects and had this to say on the subject: "In alloting funds for this purpose, preference should be given to the obtaining of data needed in marketing programs being conducted by one or more of the three State agencies usually engaged in marketing work." The reference here is to State Departments of Agriculture, Extension Services and Experiment Stations. Here again the focus is on building a strong marketing program in the States.

The carrying out of this recommendation should not prove to be unduly restrictive since most statistics projects can be designed to serve a dual purpose -- that of providing these agencies with data they need in their marketing programs and that needed by producers and marketing agencies in making marketing decisions. We have had numerous projects of this sort over the years. I recall that some years ago Kansas surveyed the egg industry and the published results served not only as a guide to the industry, but also helped the State Board of Agriculture in initiating a service program in egg marketing. A follow-up survey assisted the Board in documenting results of the program. Georgia performed a similar service in breaking out egg production in hatchery flocks from that in commercial egg flocks.

Mention should be made of the fact that an experimental concept has been the guiding principle in determining the duration of certain projects. In the case of market news projects, the policy has been to limit support with matching funds to about two years. A somewhat less restrictive policy has been applied to certain other projects, such as the objective estimating projects in California. Indications are that the duration of projects will be given more careful scrutiny in the future. I suspect that there will be more stress to move projects from the experimental stage into regular programs. This raises some questions about projects which do not fit into an experimental pattern. On this point, our Advisory Committee has recommended a five year limitation on any one project, with the inference that as the five year limit approaches, the particular project would be reviewed to determine if continued support with matching funds is warranted.

Speaking of other things for the future, I understand that some thought is being given to the establishment of a review committee within the Department to advise on lines of work that need to be encouraged in the States. This might serve a useful coordinating function. One problem we have with certain types of projects is in securing joint and simultaneous operation on a regional or larger area basis. Fruit tree survey projects are a case in point. We would like to pursue this further with the statisticians concerned.

I have enjoyed being here very much.

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EXPANDED PROGRAM, 1961 - FIELD CROPS

By John J. Morgan, Head
Fiber and Special Crops Section
Agricultural Estimates Division
Statistical Reporting Service

I have the task of evaluating, insofar as possible, our enumerative survey results for field crops. Our particular assignment is to cover the acreage and yield portion of the enumerative survey from the inception of the work through 1961. I am sure you want an objective presentation, so I shall let the data tell the story.

If I adhere to that lofty ideal, as I intend to, in the beginning I'll have to admit that we have been lax in maintaining records of the research program. Results have not been carefully documented and the job of bringing together meaningful data for this report was a terrific chore.

The fact that we have been conducting research and pilot operations should also be clearly set forth. As such, the grain had to be separated from the chaff; failures discarded; new concepts created, implemented and evaluated. To "Tell the truth" changes have been the order of the day: circularizing an ASC list in 1953; enumerating open segments in 1954; one half open and the other half closed in 1955; closed segments in 1956; shifting to one-half Master Sample segments in 1958 and into high gear in many States in 1961; not to mention the frequent changes in objective estimating models.

My last "Believe it or not" is that we were carrying out the regular work program during this time -- and doing a good job, too. In that connection, by large dose of self-administered truth serum, I am forced to admit that during the past four years only one cotton production forecast has differed from final ginnings by more than 2.7 percent.

For the purpose of this study, June Enumerative Survey acreage and objective yield per acre for years of pilot operations are compared with corresponding current and revised regional estimates of the Crop Reporting Board. Because of basic changes in procedures, comparisons are excluded for some of the formative years. Since the expanded program was set up to provide serviceable estimates at the State level, the enumerative survey data for 1961 are compared with State and regional Board estimates.

While it is recognized that the Board estimates have some limitations, they are backed by U. S. and State Censuses, ASCS measurements, ginnings and other available check data. In view of the impact of early season estimates on the economy, major emphasis is given at this time to evaluating the June Enumerative Survey acreage and objective yield work. Since the pilot program was initially set up in the 10 Southern States area, let's first take a look at the results of the cotton work -- the major crop in that area.

COTTON

Acreage planted. The planted acreage of cotton indicated by the June Enumerative Survey has been too low in all years except 1960. For the 10-State area, revised Board estimates backed up by ASCS measurements have ranged from 99.4 to 109.7 percent of the direct expansion indications. Most of the under-expansion has been in Texas. Segments in some areas of Texas were redrawn in 1960. Although the shift reduced the spread somewhat, under-estimation continued to be sizeable.

For the 1961 expanded program, the December Board estimate for the area was 4.4 and 4.1 percent, respectively, more than the direct and ratio to land expansions. The sampling error for the area was 2.9 percent. For North Carolina, South Carolina, Arkansas, Louisiana and Oklahoma, the departure of the December estimate from the direct expansion is within one sampling error. For the other States, the spread is larger. Although there were over 1,000 segments enumerated, under-expansion continued in Texas. The sampling error in Texas was 5.2 percent and the Board estimate exceeded the expansions about 6 percent.

Acres harvested. For the August report, a sub-sample of the June survey is enumerated to adjust the planted acreage to an acreage for harvest basis. Differences between Board estimates and the adjusted June acreage indications are about the same as observed for planted acreages.

Objective yield per acre. August objective estimates have varied considerably from Board adoptions, but no tendency to over- or under-estimate is apparent. For September and October, however, objective yields have tended to be on the high side. In 1961 the August 1 objective yield estimate for the 10-State area was on the low side. The September estimate was also low -- 372 pounds compared with the Board December estimate of 384 pounds. The October objective forecast of 437 pounds, however, was considerably in excess of the 381 pounds indicated by the Board for the month.

These comparisons do not measure the progress made in this area or actual benefits resulting from the objective counts. The objective forecasts are independent indications, while those of the Board take into account those data and other indications as well. One of the major advances in the use of objective data in forecasting yields has been the development of maturity categories. With these factors in the forecasting equation, the additional fruit to be set is projected with greater accuracy. Although progress in objective yield forecasting has been made along many lines, further research is definitely needed. Models used in making the 1961 State estimates were limited variations of regional patterns observed during years of the pilot studies. Now that the sampling rate has been stepped up, additional attention should be given to establishing models at least by States and perhaps even areas within States.

CORN

Acreage planted. For the 5 expanded States in the North Central area, the Board estimate of corn planted in 1961 was about 4 percent more than the direct expansion from the June enumeration. However, the area total for all North Central States of 50,752,000 acres was very close to the December Board estimate of 50,934,000 planted acres. For other years, Board revised estimates for the area were 92 percent of the June expansion in 1956, 95 percent in 1957, 102 percent in 1958, 93 percent in 1959, and 97 percent in 1960.

For the Southern area, Board current year estimates were above the June expansions from 1957 to 1960 but were revised downward, after Census data become available, to more nearly the level of the enumerative survey. In 1961 the Board estimate for the expanded Southern States was 11 percent above the direct expansion. June survey expansions for the Western area have been considerably larger than Board estimates.

The 1961 sampling error for the 5-State North Central area is 2.1 percent for the direct expansion. The sampling error by States in this area ranged from a low of 3.4 percent in Iowa to 8.2 percent in Kansas. December Board estimates for those States are 4 percent above the survey, or nearly two sampling errors, and show considerable variation by States. The Board estimate is 96 percent of the enumeration in Ohio, 107 percent in Iowa, and 114 percent in Indiana. For the Southern area, the 1961 sampling error was 2.3 percent.

Acres harvested for grain. The Board December estimate of corn acreage for grain in 1961 is 1 percent more than the direct expansion for the 5-State North Central area and 5 percent above for the Southern area.

Yield per acre. While objective yield estimates have been considerably above the Board level in all years, the spread has narrowed in recent years -- especially in 1961 -- but remains fairly sizeable. Board yields are based primarily on Census levels.

Unanswered problems still exist in the early season corn objective yield indications. For example, the regional data shows the tendency for the September 1 indication to be higher than either August or October in the North Central States, but the monthly indications are more stable in the Southern States. This is further highlighted in the 1961 data by States. The inflation of September yield appears in the North Central States, but is also evident in the States on the Northern edge of the Southern States group. This suggests that careful examination of the yield forecasting model, or formula, needs to be made and adjustments worked out, particularly for September 1.

WHEAT

Acreage planted. Board estimates of winter wheat planted have generally been above the level of June Enumerative Survey data. In 1961 the Board

estimate was 4 percent above the Enumerative Survey total for the 5 expanded North Central States. For the North Central area, Board revised estimates are 107 percent of the June Enumerative Survey in 1958, 96 percent in 1959, and 108 percent in 1960. In 1961, however, the Board estimate for the area is in very close agreement with the direct expansion. Board estimates are above area totals for the Southern and Western areas except for the Western area in 1960.

Acreage harvested. For expanded States in the North Central area, the 1961 Board estimate of winter wheat for grain was one percent more than the direct expansion. Board estimates for this area as a percent of the expansions for the years 1956 through 1960, varied from 88 to 105 percent with little or no evidence of constant under- or over-estimation. Board estimates for the Southern area, however, are consistently below the enumeration in all years except 1961. In that year the Board acreage for harvest was 13 percent above the June expansion. Board estimates for grain have been below June expansions for Western States for the past three years.

Yield per acre. In July 1958, 1959 and 1960, the objective yield was practically the same as the Board revised estimates and about one bushel nearer the revised level than the current July Board estimates. In 1961, when rust damage reduced prospect in Northern areas, the July objective yield exceeded the Board estimate for that month by .6 bushel and the December estimate by 1.6 bushels. By June 1960, the objective estimate was well in line with the final outturn. May and June objective estimates were too high in 1959. In 1958 the objective indication was very good in May but was too low in June. Objective work on wheat has not been stepped up to the operational level.

SOYBEANS

Acreage. Direct expansions for soybeans grown alone have been comparatively close to the Board estimates for all years for the North Central States area. For the years 1956 through 1960, the expansions for the Southern area were short of the Board estimates, but were in very close agreement with the Board in 1961. The State sampling error in major North Central States in 1961 ranged from 5.2 to 6.9 percent with a sampling error for the area of 3.1 percent. Since nearly all soybeans grown alone are primarily for beans, the relationship between Board estimates for beans and the June survey expansions is about the same as for soybeans alone.

Yield per acre. Objective yield data for soybeans in August have been in reasonably close agreement with Board yields, but September and October indications have tended to be above Board estimates. While the number of samples has been increased, objective yield work on soybeans is considered exploratory.

SAMPLING ERROR, EXPANDED STATES

So far we have discussed enumerative survey results for major crops. In the main, these crops are well distributed over the State and are grown on most farms. For States in the expanded program, sampling errors for State expansions for such crops range from a low of around 4 percent to 10 percent or more, depending on the distribution of the crop within the State. Sampling errors for the 16 State totals (operating States) for widely distributed major crops ranged from 1.7 percent to about 3 percent. For less widely distributed crops, the sampling error for the 16 State area ranged from around 3 percent to nearly 14 percent.

As expected, sampling errors for minor crops at the State level are comparatively large. It is also a fact that sampling errors are large for some major crops which are grown only in certain areas of the State. As examples, the sampling error for peanuts in Alabama is 15.6 percent; rice in Arkansas, 24.4 percent; and soybeans in Louisiana, 23.6 percent. For comparatively minor crops, State sampling errors are, of course, very large and range from 25 percent to 50 percent or more, depending on the distribution within the State. The following crops are examples: peanuts in South Carolina, 52.6 percent; rice in Mississippi, 60.8 percent; and barley in Iowa, 67.3 percent.

The 1961 program was the beginning of a breakout, covered only in a few States, so I think we should remember that the entire program is still on a pilot basis and should be thought of as that until we are on an operating basis in all 48 Continental States.

We have made as much progress as could have been expected in this short time. And when I say progress, any research program produces negative as well as positive results. But negative results -- finding out the things we cannot do -- are just as important as positive results.

Perhaps we have expected too much from the years of limited pilot operations. We're actually just rounding the first turn in a long-range program. The pace isn't fully set yet. Many proposals and procedures are still jockeying for position and perhaps will not exert themselves positively until at least the program enters the back stretch. Even then, I doubt if we should be too sure of ourselves until at least we have entered the home stretch.

We must always try new things and new procedures, scratch certain things as they become obsolete, and enter new knowledge into the race. Let us improve our program, making the most of both positive and negative results as they emerge. No truth serum is needed to make the challenge obvious.

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EXPANDED PROGRAM, 1961 - LIVESTOCK

By Emmett B. Hannawald, Head, Livestock Section
Agricultural Estimates Division
Statistical Reporting Service

My talk pertains to the results of the enumerative survey work in regard to livestock and poultry and also some of the problems that occur. Jack Morgan just said that we were rounding the first turn in a long range program. We have just completed 8 years of research and only one year in which a group of States were on an operational basis. I'll agree with Jack in that perhaps we are expecting too much from the enumerative survey to solve all our problems in a few years. We have come a long way but still have a lot to do.

The collection of statistics has extended over a period of nearly 100 years and it would be reasonable to expect that we have solved all our problems and that none remain. Certainly it seems that this should be time enough to do this job.

The fact remains that we have not solved all the problems and we are still faced with problems in estimating livestock and poultry, as well as crops, in spite of the time and attention devoted to solving them in the past. New difficulties have a way of springing up as old ones are solved. The progress that we have made in the last 20 years in the scope of the statistical and reporting service appears to uncover additional problems with each new venture. Ever-changing practices in American agriculture imposes problems also. We are continually faced with the need for revising methodology and procedures to keep abreast of developments and trends in production of livestock and poultry. Sometimes unsolved problems disappear or just go unsolved because the program had to be changed to fit a new situation.

I would like to take a few moments to discuss the complexity of the livestock universe that is being measured. Livestock numbers are changing every day of the year. Marketing is a continuous process and this is also true of births and deaths. When you plant a crop, that crop stays in the same location for the given season. This is not true for livestock. They have four legs, and like us they use them. In fact we help them get around by loading them on a truck or train and hauling them several thousand miles away. Livestock moves from one tract to another tract, from one segment to another segment, or from one State to another State -- maybe all in the same day. Births and disappearances are highly seasonal. Changes can be very large. For example, marketing of hogs will average over 200,000 per day. With rapid changes going on, it makes considerable difference when an inventory is taken and what it is to include. In collecting livestock data, whether by mail or by enumeration, we are trying to get a still-picture of a situation with ever-changing characteristics. Thus, a survey must be taken in a short time; if not, you may get some animals counted twice or you may miss some completely that should have been enumerated.

Another reason livestock and poultry are hard to sample is the concentration of a large number in a small area. A farmer has a tract of 20 acres which is in corn. He can have only 20 acres in this tract and, in most expansions, a tract this size would not over-expand or under-expand the sample. The contribution of a tract on the variance of crops can range only from zero to the size of the tract, while for livestock or poultry the contribution to the variance can range from zero to several times the size of the tract. For livestock a farmer may have several hundred hogs on 20 acres, or for chickens, cattle on feed, or sheep on feed he may have several thousand. When these are expanded on the basis of land area, the inclusion or exclusion of such a high concentration can make quite a difference in the expanded number and in the sampling error.

Raising livestock is not the same enterprise on most of the farms today that it was 20 years ago. In 1940, a general type of farming was still very common. Most farmers had several different species of livestock and not very many of any one. Today a farmer may have only one and he will usually have a large number.

Take for example, the number of milk cows and milk cow farms in Ohio in 1939 and in 1959 as reported by the Census Bureau. In 1939 there were 108 farms that milked 50 or more cows. These 108 farms were only a small fraction of the 187,000 milk cow farms and they had only about 1 percent of the milk cows. In 1959 there were 793 farms with over 50 milk cows and a total of 67,000 dairy farms. These farms had about 8 percent of the total number of milk cows. We now have seven times as many large farms and only about one-third the number of all farms.

We have made comparisons of the direct expansions from the enumerative survey with the Board estimates for most of the items carried on the June and December Enumerative Survey for the 16 operational States (Ohio included as an operational State). While it is also recognized that the Board estimates have some limitations, they are backed up by U.S. and State censuses, slaughter and other check data, and it is not possible to depart too far from these check data. Time will not permit a detailed discussion of all the comparisons. You should review these tables as time permits.

One of the best estimates that can be obtained from any survey on livestock -- whether it be a mailed inquiry or a personal interview -- should be that pertaining to the inventory at the time of the survey. A respondent should be able to tell an enumerator the number of the various animals he has on his farm at the time of the interview. He does not have to remember the hogs that he sold two months ago or the calf that died last month. The only inventory estimate on hogs in June for all of the 16 States is for hogs 6 months old and over. The expansions from the June Enumerative Survey range from a low of 50 percent to a high of 119 percent. The coefficient of variation of the estimated total ranged from 7.2 percent to 22.4 percent. Thus you see we have a wide spread between the June expansion and the Board estimate. For the five Corn Belt States, estimates for all hogs are somewhat closer. Ranging from 86 percent in

Kansas to 102 percent in Iowa, the five-State total is only 1 percent below the Board estimate. This would give support to a National estimate from the expansions, but improvement in accuracy is also needed in State estimates.

The question on sows farrowed during the December-May period was asked in two parts in June so that a comparison could be made with the quarterly breakdown in the quarterly pig crop States. The five-State total shows that the June expansion for the December to February quarter is 14 percent below the Board estimate, while the March to May period is one percent above. Now, you might ask why do two very closely related questions give such a wide difference. There are probably several reasons for this, but one that I would like to mention is memory bias. We know that the farther away from the date of the enumeration that the question relates, the harder it is for the farmer to give an accurate answer.

The problem of memory bias is one of the reasons we need to obtain data which relate as nearly as possible to the date of the survey.

On the June survey an attempt was made to arrive at an estimate of pigs saved by asking several related questions, starting with the number of live pigs born. From the results of this approach it appears that we get a number of pigs saved that is different from the one when we asked the farmer for the number "saved." For the December-May period the expansion is below the Board estimate of pigs saved in each of the 16 States except 2 which were 101 and 103 percent of the Board estimate. The other 14 States ranged from 64 to 98 percent.

This raises the problem of how to ask questions that can be understood by the respondent. It is probably true that when a question on "How many pigs are saved from the litters farrowed during the last 6 months?" is asked, there are many different interpretations of what is wanted. This type of error may be more serious in mailed surveys since each farmer reads the question and makes his own interpretation. In the enumerative survey, the enumerator asks the question and, if it is not clear, the farmer can inquire as to what is wanted.

While discussing nonsampling errors, it might be well to mention one other error -- that which is due to the enumerator himself. The enumerator might not ask the question right, or he might make errors in listing. If good enumerators are secured, and they are well trained and adequately supervised, this type of error will no doubt be small; but if poor enumerators are obtained, this could be a serious error.

Also along with nonsampling errors is the error due to deliberate lying, such as giving false data on schedules. We know from our mailed surveys that some respondents will not give you the correct number of livestock they have. A farmer will brag about his high yields of corn, but he doesn't want his neighbor or anyone else to know how many pigs he saved or how many cattle he has on feed. This type of nonsampling error occurs

in any survey whether it is a mailed survey or a personal enumeration. However, there may be less of this with enumerative surveys. In cases where the enumerator can see the animals, a respondent is more likely to give the correct number. In the mailed surveys we have been able to read out this so-called error bias by the use of charts. Maybe after several years of enumerative data we can handle the enumerative expansion the same way. That is, eliminate some of the nonsampling error by use of charts.

For a direct expansion on sows intended to farrow during the next 6 months you would expect the expansion to be greater than the actual farrowing. For most States this is true, and for the 16-State total the June survey on sows to farrow June-November was 4 percent greater than the Board intentions in June. Over a period of years the Board has been able to make provision in the estimate for the sows that do not farrow. After several years' history, this can also be done for the enumerative work.

Expansions for all cattle were not compared since the Board does not prepare June estimates of all cattle. Board estimates of all cows two years old and over are prepared but not published. The June enumerative expansion for cows two years old and over is considerably above the Board estimate. The total for the 16 operating States is 15 percent above the Board number.

The June expansion for milk cows is nearer the Board estimate than are all cows two years old and older, being only one percent below the Board.

A question was included on the June Enumerative Survey on cattle on feed for slaughter market. The concentration of large numbers in a small area makes it difficult to sample by a general-purpose sample. Also, this is another question that is hard to define. A farmer may be feeding his cattle on a maintenance ration. To him they are on feed, but according to our definition they are not. To obtain a correct answer on questions like cattle on feed, it is necessary to ask other questions such as kinds on feed and amount of feed fed. The addition of such questions would lengthen the June survey considerably. The use of this single question is not planned for the June 1962 survey.

In December two expansions were made: (1) the direct expansion, and (2) the December/June ratio. The ratio estimate is considered to have the lesser sampling errors of the two. The December survey included only one-fourth to one-tenth of the tracts used in June. Thus a direct expansion from a smaller sample would not be expected to be as reliable as a ratio estimate based on the June expansion.

One thing that must be kept in mind in comparing the December enumerative expansions with the Board estimates for all cattle, cows and heifers two years old and over and ewes one year old and over, is that

the December enumerative survey relates to December 1, 1961, while the Board estimates relate to January 1, 1962. For these items the change from December 1 to January 1 should not be too great. Time will not permit a discussion of the December results, but I would like to mention one item that was added for research. That is the question on weight groups of hogs on hand instead of the usual age breakdown. The age group breakdown is not serving the hog industry as it once did, as many hogs are now marketed before they reach six months of age and the majority are marketed soon after they reach six months of age. In order to compare the weight group with the estimates on age groups, the weight groups were expanded to the Board number of all hogs. These weight groups do not tie in too well with the age groups. You would not expect most of the pigs under three months of age to weigh less than 50 pounds. Also you wouldn't expect that over half of the hogs over six months old would weigh less than 200 pounds. However, this is the case for the five-State total. From this comparison we should not say that the weight groups are not a good measure of the distribution of the all hog estimates. Most of it lies in the age groups. We now have trouble in tying the pig crop and inventory together.

In this discussion I have attempted to bring out some of the problems that occur in making livestock estimates. The type of industry that we now have does not readily lend itself to a general purpose sample without some additional enumeration or sampling of extreme operations. From experience in making estimates of cattle on feed and broilers, we know that we cannot sample these large operations the same as we do the general run of operators. An attempt was made in June to get a start on the handling of large or extreme operations. But more research is needed on how to best handle these operations. This is not a criticism of the enumerative survey but it is one area in which we need to do some additional work.

In closing let me say that we have made much progress in the expanded program in the last eight years. We still have a long way to go. We must continue to try new procedures, eliminate those that are proven to be wrong and adopt new techniques as they are proven correct. Let us look with intense interest and vigor toward the future of our new program.

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SECTION II

WORK GROUP REPORTS

WORK GROUP A - CONCEPTUAL GOALS

WORK GROUP LEADERS

Chairman - Joseph A. Ewing

Vice-Chairman - Charles E. Burkhead

Recorder - Thomas L. Stuart

AGENDA AND TOPICS

Identify and make recommendations on the role of SRS -- present and future -- in light of changes now taking place and anticipated in the statistical and economic universe. Topics to be considered include:

Program content and responsibilities.

Development and attainment of goals -- meshing of present and new systems -- economic and psychological aspects -- skills needed and strategy for acquiring.

SRS as the Statistical Agency for agriculture -- policy, responsibilities, and relationships in fulfilling the needs of farmers, distributors, businessmen, and other agencies.

Future operating programs for field offices -- role of State Statisticians.

Program requirements -- balance between coverage, accuracy and speed -- planning, scheduling and timing.

Statistical principles -- minimum standards for conduct of statistical surveys.

WORK GROUP REPORT

The Conceptual Goal of SRS: To be the central agency in the USDA for the collection and reporting of primary data on farming, the rural economy, and agricultural industries and related interests.

In Implementing This Goal SRS Will:

A. Provide timely, current forecasts and estimates of the output of the Nation's farms and estimates of the inputs, inventories, and outputs of American Agriculture. It will also provide statistics on a wide range of related economic factors among these being: prices paid and

received by farmers; production costs; facilities; labor force; wages and business characteristics of farm enterprises, both individually and in the aggregate. In compiling such statistics, SRS will utilize data obtained from secondary sources as well as from its own surveys.

B. Provide leadership in determining data needs and fulfillment thereof both on its own initiative and working with data users.

C. Conduct research directed toward the improvement of survey design and methodology, forecasting and estimating models, and data handling facilities.

D. Formulate and promote the adoption of statistical standards and coordinate the compilation of statistical data of the Department.

E. Provide survey and data processing facilities for the use of other agencies.

F. Recognize the role of the State Statisticians' offices and their responsibilities for serving Federal and State interests and the cooperative development of statistical programs better to serve the needs of both. In carrying out the total statistical program, the Work Group visualizes that the State Statistician and his staff should work toward creating an image and fulfilling the role of leadership in the field of agricultural statistics, including the following important areas:

1. As the central authoritative source in his State for agricultural data;

2. As the office to which others look for technical advice and leadership in statistical survey operations and procedures; and

3. As the coordinator among the various agricultural interests of the State, in reviewing data needs and planning to meet them.

Development and Attainment of Goals

A period of carefully planned transition is essential to the development and attainment of the proposed goals. The current long-range program is a step in the direction SRS proposes to go. The installation of the operating machinery for certain phases of the long-range program has established some groundwork for the attainment of these goals. The selection of interviewers and supervisory interviewers in strategic areas within States in the enumerative survey program and especially the price program in Ohio, can be the beginning of an organization capable of handling any type survey.

Progress must be made as rapidly as possible toward placing the long-range program in full operation. It becomes increasingly necessary to shift manpower to more productive methods as the workload of the expanded program grows.

The first step in the transition from old to new methods should be the grouping of surveys into three categories using the size of the universe involved in each case in each State as the initial criterion.

Group A — This category will include those surveys in which only a small universe is involved. It will be necessary to identify every unit in the universe by specified characteristics and to keep this list current. Mail and/or interview methods of data collection will be used to make a complete enumeration. Hatchery reports, slaughter reports and mill and elevator reports are illustrations of surveys that may fall in this category.

Group B — This category will include surveys based on a medium sized universe. It will again be required that every unit in the universe be identified. A stratified probability sample will be drawn which will include all operations defined as large. Collection procedure will then be the same as for an A-type universe, that is, complete coverage of the sample.

Group C — All surveys not classified in categories A or B will fall in this group. The common characteristic of this group is a universe too large to make and maintain a complete identification of all units.

In general, it is expected that the general purpose survey will be a major tool for collecting data in this category. However, it is expected that this type survey will not yield all the required results in some areas and for some items. In these cases it will be necessary to supplement the general survey with special purpose samples.

Before the various surveys can be categorized, it will be necessary to set up size ranges for each group. A review of the program of each State will then be required to properly classify every survey or commodity.

The present enumerative survey program will provide the basis for operations in Groups A and B. The field staff for this program may need to be supplemented with additional enumerators strategically located.

Plans and other preparations should be made as rapidly as possible for starting the process of transition. Planning in Washington at both the research and operational level will be involved. This planning will include scheduling and timing which will be discussed later. In addition, setting up limits for the classification of universes and establishment of sampling frames for various items and sets of circumstances should be prepared. When these guidelines are established the planning procedures should be moved to the State level.

Preliminary plans should also give consideration to the classification of farms into commercial and non-commercial categories to prepare for the voiced need of ERS and others for data in such categories.

The Work Group wishes to reiterate the statement of Panel A of the Biloxi Conference . . . "Without a doubt the mail survey will continue as a primary tool." However, a shift to the use of probability samples should be made as soon as possible. It might also be well to repeat that the terms "mail" and "enumeration" refer to methods of data collection and that "probability" refers to sample design.

Because of the skills needed to attain these goals, adjustments in staffing, especially in State Offices, and in assignments of duties, should be anticipated. Some of the specific areas in which skills need to be developed are:

A. Hiring, training and supervising of interviewers.

B. Sampling techniques.

C. Designing of schedules and preparing instructions.

D. ADP programming.

The training of personnel should be one of the first items to be scheduled in the initial phases of planning.

Planning, Scheduling and Timing

Planning for attainment of SRS goals should be started immediately. Considerable time will be required to start some portions of the proposed program, but for some items and some States a start can be made almost at once. In fact, certain phases of the program which fall in Groups A and B are now in operation in some States.

It is suggested that a committee of field and Washington staff members be designated as soon as possible to develop over-all plans of action. While it is felt that some portions of the proposals can be started piecemeal, State by State, they should not be attempted in a haphazard manner. A schedule should be set up on an over-all basis with wide latitude for individual State participation.

As far as timing is concerned, work on some points of the program should be started as soon as feasible. The first steps involved might well be the construction of lists for Groups A and B from which probability samples may be drawn and put into operation. It is also suggested that certain parts of the program might be started on an area or even a nationwide basis while others may need to be started on an individual State basis depending on circumstances.

Statistical Principles

The group realizes that statistical standards are applied to surveys conducted by SRS. However, it is felt these standards are, to a considerable

degree, implied rather than expressed. It is recommended that a guidebook of standards for the conduct of statistical surveys be developed by SRS covering all types of surveys -- National, State and local. In the preparation of such a guidebook, the goal is to prescribe standards and procedures for statistical practice that will yield estimates in which a high degree of confidence can be placed.

As soon as the proposed guidebook becomes available, SRS should take steps toward meeting the standards to be set forth. It is recognized that this will be a slow process and that some special technical assistance may be necessary to accomplish the desired goal in the State offices. Special assistance may be required to modify or revise existing procedures to meet standards consistent with resources, coverage, speed and legal requirements.

All new surveys undertaken by SRS for other agencies should be required to meet these standards -- consistent with resources and time limitations imposed upon that agency.

Insofar as possible, all surveys made by Federal agencies, State agencies, quasi-public or local agencies should be checked for consistency with these standards if the data collected are to be a substantial part of any estimate published by SRS. If such checks reveal that improvements can be made, the cooperator or collaborator should be encouraged to adopt procedures which will produce more accurate results.

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WORK GROUP B - TECHNICAL OBJECTIVES

WORK GROUP LEADERS

Chairman - A. V. Nordquist

Vice-Chairman - Bruce W. Kelly

Recorder - John W. Kirkbride

AGENDA AND TOPICS

Identify and recommend technical objectives needed to meet the demands for agricultural statistics. Topics include:

Data acquisition -- sampling, questionnaire design, mail surveys, enumerative surveys, interviewing techniques, check data.

Methods of estimation -- editing, timing, estimation formulas, combining indications.

Criteria for evaluating reliability of estimates.

Technical problems in meeting National, Regional, State and local data needs.

ADP - program coverage, transfer of data to machine media, data transmission, training, security, storage and retrieval, systems development.

Research needs.

WORK GROUP REPORT

Introduction

The charge of this Work Group centered around the task of identifying and recommending technical objectives needed to meet the demands for agricultural statistics. The group worked within the framework of the mandate that probability sampling is a part of the way of life -- becomes the order of the day rather than a tool to be used if convenient. These technical objectives should be provided through procedures that will come the nearest to measuring the true level within the limitations of human error, time and money. A complete evaluation of this subject would necessarily involve considerations pertaining to the role of SRS in the field of agricultural statistics -- an area assigned to Work Group A. This group, therefore, limited the scope of its deliberations largely to the framework

of the SRS programs as known today. Even within this framework, the topics that arose were quite numerous -- too numerous for individual or detailed treatment. It was, therefore, necessary to establish at least some ground rules of operation as well as rather definite areas for consideration.

The ground rules focused on several basic premises that had been asserted during the conference. Probably the most important of these was that the ultimate goals must heed the demands of probability sampling and bring about, insofar as possible, the perfect fusing of area sampling, objective yield sampling and mailed surveys. Lending support in the enforcement of these ground rules is the knowledge that (1) some present procedures may not conform totally to the modern statistical ideal, (2) present day estimates contain elements of judgement based on data that have known shortcomings, (3) progress of scientific inquiry is hampered by the lack of a measure of the statistical adequacy of the data, and (4) statistical principles must receive proper consideration in dictating the manner in which the various data are fused together.

The topics for consideration are segregated into the four relatively broad categories which follow:

A. Acquisition of Data

The group believes that every estimate published by SRS should be based on statistically sound indications. Operating within this belief would involve:

1. Adoption of the principle of representative sampling as defined by Earl E. Houseman. This means: A set of filled schedules resulting from the application of probability sampling such that the sampling error and biases associated with the method of selection, non-response and estimation are known to be sufficiently low that the estimates will serve a useful purpose.

   The Work Group concurs in this definition but is also concerned with the need to consider the problem of non-sampling errors.

2. A Service policy to secure representative samples for both mail and enumerative surveys. This will require that resources be made available to secure listings of universes from which mail samples are to be drawn. These listings will need to take into account large operations and their effect upon the sample. Survey of non-respondents should be made as needed to evaluate the non-response bias. Questionnaire design needs to be given careful continuous study to keep pace with changing conditions.

   In cases where estimates are based mainly on totals or averages compiled by other agencies or groups, it should be determined that these data meet SRS requirements.

3. Consideration of the increasing demands for county statistics. The Work Group recommends that the SRS statistical program include provision for the collection of data upon which to base statistically sound estimates at the county level.

4. All questionnaires designed to fit the universe being surveyed. General purpose inquiries are becoming less useful due to changes in the character of enterprises surveyed by SRS.

B. Methods of Estimation

The group is of the opinion that serious consideration should be given to the combining of indications from area samples with those from probability list samples through a "wedding" of the two processes. This should not be a "long engagement." This would envision a substantial reduction of sampling errors and an increase in efficiency.

It is recognized that probability list sampling presents major problems in compilation of lists. This problem will require much additional study and planning but some suggested sources are ASCS and Farm Census records.

For optimum statistical efficiency it is further recognized that certain extreme operators must be enumerated in a universe separate from both the area and the probability list samples. This is particularly true for livestock and poultry enterprises.

C. Automatic Data Processing - The Work Group wishes to commend the task force for its accomplishments to date in developing an ADP program for SRS. It is recommended that work on this program be expanded as rapidly as resources permit.

D. Evaluation of Reliability of Estimates

This is an area in which the group felt there was a considerable number of statistical voids and emphasized the need to resolve these voids as the total program moves forward. The area of evaluation was subdivided into two categories: one centering around the materials presently available through sources other than mailed, objective yield or enumerative surveys, and the other dealing with non-sampling errors associated with the mailed, objective yield and enumerative surveys.

1. Source Materials

As the SRS program moves toward the desirable statistical model that will produce an estimate with the needed sampling error appendage, problems will be faced relative to the

evaluation of such estimates in the light of other source materials, some of which have considerable stature. The group has defined such source materials as a body of data that has some acceptable statistical status and warrants appropriate weight in arriving at an expert opinion. Such materials are generally identified as check data although some are presently accepted as primary source data. This suggests that SRS has an obligation to arrive at expert opinions that maintain appropriate relationships with known source materials.

With the attainment of a procedure that will provide data with known accuracy, problems will arise relative to the acceptance, modification or rejection of such data. This means efforts dare not be relaxed in this area in the hopes that problems will not arise; that known reliable sampling errors will not be realized. Now is the time to do the homework -- to orient thinking in the direction of what these relationships may be and most urgent of all, what reliability exists within these source materials.

The source materials presently available to SRS are much too voluminous to fully enumerate or to treat individually. However, it seems well to at least identify a few having broad scope and considerable statistical stature.

a. U. S. Census of Agriculture - It seems evident that SRS is moving toward the hour of decision relative to the relationship that should exist between SRS estimates and the U. S. Census of Agriculture. It is recognized that much of the current program has strong ties with, and is geared to, the Federal Census. However, it also seems evident that progress toward the statistical objectives of SRS may produce estimates that will not be compatible with the Census. Decisions will be required in establishing the SRS position in these matters. Appropriate decisions may not come easy in the light of the general acceptance and present stature of the Census data.

b. State Farm Censuses - These vary by States and between years in degree of completeness and content. They must be evaluated and in many cases used as a large sample. Their primary use is in revising current estimates the following year, thus keeping the estimates more current and possibly reducing the need for revision after the next U. S. Census. In addition to using such data to evaluate current estimates, they are an important source of data for making county estimates, and as a source of names for samples.

c. Livestock and Poultry Taxation Assessments - These vary in degree of completeness between species and classes of livestock. Their use is similar to that of the State Farm Census largely in tracing year-to-year trends.

d. ASCS Data - These include both those enumerated for establishing individual farm allotments and compliance measurement data. They may contain biases both upward and downward which must be taken into account. The data vary in completeness due to program participation. ASCS wool incentive payment data and possibly some other types of Government program data may have possibilities.

e. Market Check Data from Trade Sources - These include items such as soybean and flaxseed crushings, peanut processings, cotton ginnings, tobacco sales, sugar beet factory reports, slaughter and market records, and other similar information. They vary in degree of completeness.

There may be instances where official estimates will need to be based on acceptable check information disregarding expanded estimates from probability samples regardless of error size. At the same time, the group realizes there will be possible differences with census data which will require rejecting census numbers. The group wishes to emphasize that each statistician has a responsibility in the continuous evaluation of any check data used. As SRS moves into the broader phases of the expanded program, a task group should be assigned to give close scrutiny to check information of all kinds. The possibility that policy may develop where census-type data now acceptable may be rejected in the future should be recognized.

2. Non-Sampling Errors

Work to date on this problem has been restricted due to a shortage of qualified manpower and lack of resources. The SRS hopes to be tooled to make an effective attack on these problems in the near future.

Some of the specific areas requiring attention are:

a. Definition of Terms - There is an urgent need to sharpen definitions throughout the estimating program. Typical examples of fuzzy concepts are: pigs saved, milk cows in herd, bushels of corn produced, prices paid and prices received.

b. Question Wording - There must be a systematic investigation of long-standing weaknesses in data due to ambiguous or faulty question wording. New questions should be tested and responses evaluated in order to reduce non-sampling errors. A continual study of conceptual needs is necessary to insure that mail and enumerative approaches will secure comparable data.

c. Response Biases - An effort must be made to recognize and minimize such response biases as memory lapses, intentional erroneous answers and misunderstandings.

d. Interviewer Biases - A thorough program for selection, training, and supervision of enumerators is necessary to reduce interviewer bias. Quality checks such as re-enumeration are desirable to insure the lowest possible error arising from this source.

e. Recording and Data Manipulation Mistakes - Constant vigilance is required to guard against errors creeping into the estimates due to human weaknesses in recording data on the original document and in summarization procedures.

The Work Group recommends that, since efforts in this field have been negligible and there is extreme urgency to resolve differences in definitions and concepts, studies be initiated to investigate the sources of non-sampling errors, and to isolate and eliminate difficulties. Such studies should be conducted independently, as well as concurrently, with the operational program.

E. Needs for Research

The Work Group feels that SRS has the responsibility to provide agricultural data to meet National, regional, State and local needs. To meet these widely divergent needs, no single survey procedures can be expected to provide the answer. The SRS estimating program must be based on a system of representative samples designed to meet these needs. It is believed the needs at the State and National levels should be based on a probability interview system of area and/or list samples. Local needs may have to be met by a combination of large list samples with a different type of probability estimate at some higher level in order to provide a measure of the representativeness of the local data.

It has generally been accepted that the goal in the expanded program will provide each State with reliable estimates of known accuracy.

Quite a number of State statisticians are concerned about the large sampling errors by States and the possible trend favoring emphasis on regional and National estimates. This concern centers around the continuous use of a general purpose sample too small to produce consistent State estimates within reasonable limits. It is recognized that personnel and monetary limitations may have been pertinent limiting factors in the past but this should not restrain efforts to develop a sample designed to carry the load. This group wishes to restate the belief that State estimates must continue to be the primary objective of the SRS program and that future deliberations, programming and actions should strive to produce these results.

The Work Group sees an urgent need for research in the following areas:

1. Determine the adequacy of list for probability mail or interview samples from U. S. Census, State Farm Census and ASCS sources.

2. Continue to explore the use of probability lists from screening adjacent segments. This research should include a means of determining a measure of incompleteness, adequacy of definition of the sampling unit used, etc. In order to implement this research, an agressive effort must be made by all States to construct and maintain current lists of large and specialized operations.

3. Expand price studies in Ohio to other States and give more attention to concepts, definitions, specifications and appropriate methods of including new items and dropping obsolete items. The group also urges that a summary of progress in the Ohio research work be made available to all field offices.

4. Identify those commodities or items which are appropriate for the general purpose sample. Also, identify the means by which appropriate estimates may be secured for the other commodities.

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WORK GROUP C - BEHAVIORAL RESPONSIBILITIES

WORK GROUP LEADERS

Chairman - Russell P. Handy

Vice-Chairman - Creighton N. Guellow

Recorder - Alan R. Miller

AGENDA AND TOPICS

Organizational environment -- internal and external conditions and influences and their impact on the attainment of program goals. Identify strong points and weak points and recommend methods for improvement. Topics include:

SRS Organization -- internal relationships.

Lines of authority and responsibilities.

Internal communications needed to achieve understanding of policies, programs, and procedures.

Personnel specializations.

Public relations

SRS - Respondent relations.

Relationships with users -- farmers, businessmen, legislators, other agencies, etc.

Reports -- content and design.

Federal-State Relations - State Cooperative Programs
AMS Matching Fund Programs

WORK GROUP REPORT

Introduction

With one exception, the Work Group followed the subject matter outline in the Conference Program. It was felt that the topics of SRS Organization and Lines of Authority and Responsibilities were so closely related that separate reports on each topic would involve considerable duplication. These topics are therefore included as one major segment in the report which follows.

The discussion of all subject matter was conducted by the group as a whole. Preparation of the report was assigned to five sub-groups with chairmen who presented the report for their sub-group.

SRS Organization, Internal Relationships, Lines of Authority and Responsibilities - Francis J. Graham, Sub-Group Chairman

It was noted that the organizational stature of the crop and livestock estimating program was elevated through the creation of the Statistical Reporting Service.

The SRS organization may be considered somewhat unique in that a single program division does not handle all of the functions attached to the major program -- crop and livestock estimates. It is believed that the SRS organization, as now constituted, will operate efficiently because of the common goals, close relationships, and staff cooperation throughout the Service.

Considerable discussion was directed to the functions and role of the Crop Reporting Board. Particular significance was attached to its long history as a public image or symbol of security and the specific time factor in releasing reports. Although there were no suggestions for significant changes, there does appear to be some fuzziness in identifying membership and functions of the Board.

It is recommended that:

A. The scope, functions, composition and policy formulation role of the Crop Reporting Board be re-examined, along with its relationship to functions of Division Directors and Branch Chiefs.

B. Guideline criteria be developed for use in identifying reports which should be classified as "CROP REPORTING BOARD" issuances.

C. Continuing emphasis be directed toward coordination of agricultural statistical data collection and dissemination programs. SRS is becoming well equipped to function as the primary agency for conducting statistical surveys relating to agriculture. Advances being made in data collection methods greatly enhance the ability of SRS to provide statistics needed for agriculture and related interests. The high degree of flexibility which is being built into the SRS data collection system through implementation of the Long-Range Program and further expansion of ADP facilities, makes it possible to be of further service to other agencies in the collection, analysis, and dissemination of statistical data on agriculture. It is felt that the capability of SRS in this area should be appropriately recognized.

Internal Communications - Creighton N. Guellow, Sub-Group Chairman

It is recommended that:

A. The policies, as set forth in C.E.M. 1681, in general, be continued. At the same time, there is a need for a better understanding and adherence to proper lines of communication as outlined in this C.E.M. This can be accomplished by establishing additional guidelines, where necessary, as to whom would normally sign different types of correspondence between Washington and field offices, and similarly, between field offices and Washington.

B. A system be inaugurated for issuing, at appropriate intervals, an index of all currently effective issuances of Technical Instructions and Field Office Memoranda to facilitate quick and easy reference. A project is already under way for codifying and indexing all C.E.M.'s dealing with basic organization policy.

C. A study group be activated at the earliest possible date to investigate the feasibility and cost of providing high speed communication facilities between Washington and field offices. The pressing need for such facilities derives from the fact that some of the field offices are not able to provide sufficiently prompt service to the press and other users of agricultural forecasts and estimates. In many instances users of these data call State Statisticians by phone shortly after release time indicating they have U.S. totals and averages from the wire services and request State figures for their immediate use. Frequently the State figures are not yet in the hands of the State Statistician when these calls are received. The lack of rapid communication facilities frequently causes a delay of a day or more in releasing published reports. This constitutes a handicap in service to the public and results in prestige and public relations problems.

   It seems improbable that communication facilities associated with ADP methods will fill this need for SRS for a number of years to come. The need for speeding up Washington-field communications by means of high speed communication systems was emphasized in the report of Panel D at Biloxi last year. Since little, if any, progress has been made in this area, the Group urges that the study group be given a high priority and that steps be taken to implement the findings of the group as soon as possible.

D. Field statisticians be ever mindful of the need for keeping Washington and other States informed, by means of carbon copies of correspondence, whenever States other than their own are involved and there is general interest in such correspondence. This can be especially important when State Statisticians receive requests for information from outside their own States.

E. Regional conferences be held periodically for groups of States with common problems. Attendance at the regional conferences should include all professional personnel who can be spared from the respective State offices. Whereas the present policy providing for National conferences for Statisticians-in-Charge of field offices is an excellent one and should be continued, additional regional meetings would provide

for the exchange of ideas among the participants and in general would provide an effective tool in the continuing search for improvements in technical and administrative operations.

F. The monthly staff letter:

1. Place more emphasis on keeping field personnel informed of impending activities to the end that field offices can do a better job of planning ahead.

2. Be issued more frequently so that all personnel can be kept informed on a more current basis with respect to matters covered therein.

3. Cover more information on Departmental programs and events.

4. Be used as a vehicle for the exchange of improved office procedures and techniques, especially with regard to suggestions which have earned awards.

G. When projects involve more than one Division, Branch or Group, early exploratory meetings be called with the personnel involved in order to coordinate the necessary actions and procedures. This will facilitate and expedite handling of such projects.

H. Field offices be informed fully and promptly of developments bearing on implementations of new projects. It is recognized that staffing up with requisite professional personnel for rapidly expanding programs frequently must lag behind initiation of such programs. However, field offices need to be informed as promptly as possible about when the needed augmentation of professional staffs can be expected. Keeping field personnel informed on these matters will go a long way toward maintaining employee morale on a high level.

Personnel Specialization - Paul W. Smith, Sub-Group Chairman

There is a definite problem in the degree of specialization that is desirable in State and Washington offices. The degree of specialization needed to perform the work, and at the same time adequately provide for the training, growth and morale of the professional staff, is difficult to evaluate. It is complicated by the necessity of frequent reassignments of duties within the office and transfer of personnel to other field offices and to Washington. In the present system it is possible to reach a grade 12 assignment fully qualified to take over as second in command or to reach that level without such training.

The training of the professional staff should be well rounded. At the same time, sufficient specialization should be required so that an employee can qualify for the grade and be able to carry similar duties in other field offices. The problem is further complicated by the fact that specialization in large offices is in sharp contrast to the permissible degree of specialization in offices with a smaller professional staff.

From work standpoint it is recommended that:

A. Assignment of grade 5's include intensive training of a general nature.

B. Grades 7 through 9 include assignment to a given commodity or job and assignment as assistant on other specialized work of a more difficult nature. These assignments should be of a sufficient length of time that the statistician masters the subject matter and mechanics of the job, begins to recognize the statistical problems involved, and contributes to their solution.

C. Grade 11 and 12 include assignments to main commodity or work groups. Duties should include responsibilities for the assigned technical work and office management training.

From employee standpoint it is recommended that:

A. Grade 5 assignments be such as to contribute to satisfactory development of, and keep pace with, the employees ability to learn.

B. Grades 7 through 9 assignments be such as to fully challenge the ability, ingenuity and knowledge of the statistician so that his experience will be as broad as possible.

C. Grade 11 and 12 statisticians be permitted to assume responsibility for a quality performance within specified time limitations of the assigned work.

It is recognized that these are general objectives and that individual offices will need to make modifications to meet special situations.

It is suggested that Division Directors, Branch Chiefs and State Statisticians more fully consider over-all training experience in making staff assignments. Special assignments of younger statisticians should be so directed that an over-supply of specialized candidates will not be funneled in a direction where few job openings could be expected. Board duty and training periods in Washington continue to be particularly beneficial for younger statisticians and trainees.

Information and Public Relations - Wayne V. Dexter, Sub-Group Chairman

There is need for increased and improved communications on information matters -- among the States and between Washington and the States. Continued publication of the proposed letter "The Respondent" is recommended as a step in meeting this need.

It was generally agreed that a favorable public attitude toward SRS is essential to efficient performance of its assigned function. To bring this about, increased effort should be made to identify the agency with its work.

It is recommended that:

A. A symbol or emblem be developed for SRS. This will help create recognition that material now reaching the public in various forms and under many names all originates within a single agency -- the SRS. It is further suggested that employees in Washington and the field be given the opportunity to suggest a design for the symbol.

B. A booklet describing the functions of SRS for the layman now being prepared in Washington be expedited. The visuals in the booklet should be converted to slides and a script prepared for use at public meetings. The booklet will be valuable for recruitment and an effort should be made to distribute it to colleges and universities.

C. A special recruitment bulletin aimed at prospective statisticians be prepared.

D. The film "Compass for Agriculture" be revised and updated.

E. The flow of press and radio material from Washington on subjects designed to improve survey response be increased. Such material should be programmed in advance to give field offices ample time for distribution.

F. Effort be made to develop a national TV outlet for SRS on a regular basis. The Information Division is urged to explore the possibility of building an SRS program patterned along the line of TV weather reports.

G. More use of exhibits be made as a means of reaching people who have relatively little contact with agriculture. Increased use should be made of the Washington information staff in designing exhibits.

H. Additional emphasis be given to increasing response to direct mail surveys. All State offices should be supplied with a kit on direct mail recently prepared by the Extension Service. Personal visits to respondents are also considered effective. Newsletters for respondents are effective in maintaining lists and increasing returns. State offices are encouraged to prepare separate newsletters for as many lists of respondents as possible.

I. The Information Division conduct more workshops to improve the subject matter content, make-up, and dissemination of releases. To conserve time and funds, workshops should be scheduled consecutively in contiguous States.

J. Additional efforts be made to inform local USDA representatives about the SRS program including methods used and reliability of the estimates.

Federal-State Relations - Clarence D. Caparoon, Sub-Group Chairman

For nearly a half century this organization has developed and pioneered a program for cooperative collection of statistics with State governments. The fact that these Federal-State cooperative programs have grown and prospered is strong evidence of the soundness of this approach to statistical data collection in Agriculture. Prominent among the factors in the success of these Federal-State relationships is the clear recognition of the need for flexibility among the States in jointly working out common problems. Agriculture in each State is different. Needs for agricultural data are therefore different. The Federal statistical program provides the basic needs for farm and food statistics not only for States, but also for evaluating the National situation. The SRS goal is to meet these National needs with the highest efficiency and minimum duplication of effort with State governments. At the same time, the variable needs of States in addition to the basic National requirements must be recognized.

In order that necessary expansion of Federal programs may take place without sacrificing services to States, it is recommended that:

A. Field offices be fully staffed as soon as possible to carry the expanded program.

B. The Washington office, at the start of new projects, strive to give as much notice and lead time as possible to field offices.

C. Direct financial support from industry, trade groups and other government agencies be encouraged through the use of trust funds or similar arrangements in carrying out new statistical programs within the framework and goals of good public policy.

The need for county and local data on a broad range of subjects continues to grow and intensify. These demands are likely to increase rather than diminish. The problem of financing county estimates was recognized at Biloxi. On page four of the report on that conference, item three recommends that local data needs arising within a State should be State financed. This recommendation needs re-evaluation in view of National supply control programs such as the recent feed grain program.

Basic data projects under AMA programs are highly important in State statistical programs. Recognition of this is long standing and the need for these projects continues to expand. The AMA Act clearly calls for activities with State agencies in areas of marketing service, education and research. The importance of marketing services activities must be fully recognized. It is suggested also that administrators in SRS and AMA coordinate these activities to the fullest possible extent. This could be implemented by a Department advisory committee concerned with this activity. Projects originating in States should be fully coordinated with Federal commodity programs where applicable.

Finally, the importance of Federal-State cooperation in developing a well balanced statistical program to serve agriculture and the food industry, needs to be emphasized. These relationships have been significant in progress in the past. They can contribute even more significantly in the future, but only if their importance is recognized and developed on a partnership basis.

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WORK GROUP D - MANAGEMENT PLANNING

WORK GROUP LEADERS

Chairman - Cary D. Palmer

Vice-Chairman - Robert H. Moats

Recorder - Donald D. Pittman

AGENDA AND TOPICS

Exploration of areas which are in need of more effective management techniques and planning. The role of "Central" Management as a responsive tool for program needs. The role of "Local" Managers; i.e., Statisticians in Charge -- delegations, responsibilities. Work measurement and scheduling. Simplification of administrative processes -- legal and other external requirements vs. internal needs. Topics to be included are:

MOS - Organization, functions.

Operating procedures and instructions.

Relationship to SRS Divisions and field offices.

Centralization vs. decentralization.

Financial management - Fund allocation and control procedures, obligations, T&A reporting, payrolling, per diem and mileage.

Facilities - Space management, equipment and supply management, records management, issuance system.

Personnel Management - training, and career development, employment procedures, recruitment and staffing, supervisory qualifications, promotion programs, employee management relations, fair employment practices, safety and incentive awards.

MODE - Management of Objectives with Dollars through Employees.

WORK GROUP REPORT

Introduction

The Work Group followed the outline given by the National Conference Chairman, and divided the preparation of the report into five sub-groups with chairmen who presented the report for their sub-group.

The updating of the White Papers by MOS was most helpful source materials for the Work Group as were the suggestions from Washington and Field Statisticians and the Biloxi Conference Reports.

The Work Group commends the MOS for excellent progress in setting up and getting into operation procedures in Financial, Facilities, and Personnel Management under difficult conditions.

The areas which the group discussed most and considered most important are:

A. Rating of State Offices: The group commends the Administration for recommending an upgrading of some State Offices. It also strongly urges that efforts be continued to upgrade additional field offices.

B. Recruitment of statisticians and clerks is one of the most critical problems and must have continuing attention of MOS and the State Offices.

C. Staffing of field offices needs continual review to meet the demands of new and expanding surveys. Staffing in many States, at least, is regarded as inadequate to meet many peak loads.

D. The new centralized obligation procedure should be evaluated with field office participation after there has been a pilot study in at least three States.

MOS Organization and Function - H. M. Walters, Sub-Group Chairman

The functions of MOS are to assist ERS and SRS with their responsibilities in the area of budgeting, payrolling, space, personnel actions and related activities. The MOS staff is capable and is dedicated to doing their job more effectively.

In this connection, it is imperative that improvements be made to minimize the paper workload in SRS and to provide a more efficient management set-up.

Specific areas in which improvements are needed are as follows:

A. An organization chart should be prepared clearly showing the MOS organization, the duties of each in MOS and the appropriate office to be contacted for aid in handling specific problems.

B. The group recommends that any matters such as those involving policy, allocation of funds, commitment of funds, change in personnel staffing, and procurement of equipment be routed directly to their respective Division Administrative Officer. Routine communications involving matters such as corrections on T&A and other reports, record errors, and routine personnel action forms should be handled directly

with the MOS office involved. It is further recommended that an instruction be issued establishing these lines of communication.

C. MOS should maintain the file of standardized job descriptions covering each of the various jobs common to all SRS offices. Where only routine changes are needed, the description can then be easily modified to fit the particular position involved. A complete file of standardized job descriptions should be furnished all State offices.

D. More work is needed by MOS in the area of job classification designed to assure proper classification with comparable job responsibilities and pay scales within SRS and any other agencies in the Department as well as other Departments.

E. There is an urgent need to simplify and streamline the administrative paperwork. Do not make changes for the sake of change. A change should clearly result in a more efficient operation. In setting up the new procedural manual, changes from present procedures should be limited to changing name to "MOS" unless changes (1) reduce the workload level, (2) substantially improve the results, (3) clarify the instructions, and (4) remove non-applicable instructions.

F. Some concern was evidenced in the group as to whether the centralized management function as set up in MOS is the most efficient way to service the wide-flung SRS organization. This staff has consistently stated that their objective is to be "on tap--not on top." It is the feeling of this group that there should be a concerted effort to make the present centralized system work. Actually it has been in operation less than one year and many of the problem areas are rapidly being ironed out.

Financial Management - L. W. Wallin, Sub-Group Chairman

A. Per Diem and Mileage Rates

It was agreed that the recent adjustments in per diem and mileage rates were needed. However, considerable interest exists as to rates being paid by other agencies. These rates are available in MOS to all who may be interested.

Present policy in MOS envisions the review of per diem and mileage allowances at least once each year. The group endorses the yearly reviews in the hope that SRS will be granted rates adequate to cover travel expense and rates commensurate with other agencies in the Department.

B. Payrolling - Transfer to New Orleans

The Work Group recognizes the need to cooperate fully to effect the orderly transfer of payrolling in line with Departmental policy.

C. Daily Performance Records for Fund Allocations and Control

Washington believes it necessary to continue the daily performance records as a basis for preparing certain budgetary data and for providing D. C. operating officials with information on time spent on the various work programs by field offices, although they are not used generally for Federal Fund Allocations. Many of the States, however, are using them for State budget control and allocations for sub-work plans. The Work Group urges the continued use of the daily performance records.

D. Obligations

The Work Group has carefully considered the centralized obligation procedure in relation to the system that has been in use in the field offices for the past eight or nine years. The group did not attempt to examine and evaluate the procedural instructions but rather considered the problem in the light of desired principles and objectives.

The group is concerned about the operation of the proposed obligation system as they have not had an opportunity to appraise its import in terms of producing obligation data for management purposes, extent of records required and the general flow of documents. The rate of expenditure fluctuates widely from month to month and it is essential that the system provide for this so that the manager can determine at any time just where he stands in relation to the limit of the total resources.

The proposed system, as outlined by the Division of Budget and Finance, appears to recognize the following basic factors which must be inherent in any acceptable system:

1. The Division Director will continue to be the accountable and responsible officer in the management of all resources placed at his disposal.

2. The Statistician in Charge is in fact the manager as well as the accountable officer to the Division Director of the resources at his disposal.

3. The fiscal workload in the field office including the flow of papers to and from the fiscal office will probably be less, but no greater than for the system that has been in use.

4. The field statisticians will make estimates of their obligations.

E. Recommendations

Recognizing that present policy dictates a centralized system in SRS, and that there may be ADP implications which would automate budget

and fiscal activities, the Work Group makes the following recommendations:

1. That a pilot study be conducted in at least three State offices to test the procedures and to make such modifications as may be necessary to adapt the system to meet the needs of the accountable officer both now and in the foreseeable future. At least one State should be one of the larger expanded program States.

2. After the pilot study has been completed and an evaluation has been made with field office participation, the Field Operations Division Director will determine whether or not the proposed system shall be adopted for field office use.

Facilities - Roy Potas, Sub-Group Chairman

A. General

Recognizing this topic as not very dramatic or glamorous it may, however, create some controversies as it relates primarily to physical factors, or the day-to-day housekeeping facilities which are so vital to the orderly operation of the shop.

Each item on the agenda was considered. Additional items were injected during the Sub-Group discussion stage. An attempt was made to screen out some of the more pertinent points for full panel consideration. They are as follows:

B. Space Management

Definite problems do exist and will continue to arise in this area. In order to provide general guidelines for the use of field offices more fully utilizing current space and facilities, a section in the MOS proposed procedures manual should be devoted to this area. In addition, personnel versed in space management should be available at the Washington level to visit and assist the States as required. These personnel should be familiar with the office problems and procedures as regards space requirements and work flow at the State level.

In conjunction with the above, the Washington space personnel should develop scale model templates for the most desirable working space for standard operations and functions. These would be made available for utilizing new office space or for relocation within currently utilized space.

The section in the MOS procedures and operations manual should indicate both the most desirable and minimum acceptable standards in the following areas:

Lighting, acoustics, ventilation, power requirement, partitions, work flow, safety, water supply, rest rooms, and parking.

C. Probable Effect of ADP on Various Kinds of Equipment

1. Office Machines

a. Many typewriters may have punch attachments for paper tape or cards.

b. Adding machines will probably have punch paper tape or other data capturing equipment.

c. Magnetic ink may be used in data processing to make it possible to read from characters printed on the document.

d. Port-a-punch or some other type of punch for preparing cards near the source of the data will be used.

e. Mark-sensing appears simple enough now, but is limited in practice to where strict control can be maintained at the origin.

f. Optical scanners may be used for reading printed page and for questionnaires designed to take advantage of this equipment.

2. Mailing Equipment

a. The Post Office Department has developed automatic sorting equipment.

b. Postal practices may require standard sizes of envelopes.

c. It is possible that the new computers will be able to handle mailing lists, and to provide a means of addressing material to be used in mailing questionnaires.

d. Samples may be drawn from a large master mailing list--the mailing list to be kept on cards or tapes.

3. Desks

Doubt if much change will be made as a result of data processing equipment being added.

4. Surplus or Obsolescence

a. Present typewriters may become obsolete because of optical scanners and the necessity to capture data close to the source.

b. Possibly some addressing equipment will become obsolete.

c. In the event a considerable volume of work is transferred to the computer, it is possible that some of the adding machines now in use will be obsolete or not needed.

D. GSA Standards for Supplies

It is recommended that if supplies are received which are of an inferior quality, the matter be referred to the MOS staff in Washington.

E. Upgrading of Equipment

It is recommended that office furniture and equipment be constantly improved and upgraded as funds become available.

F. Improving Release Materials

Clarification (or release) of restrictions on printing and/or duplicating as applied to the State office and the purchase of off-set or comparable equipment to improve the quality and type of releases of material in SRS field offices is needed.

G. Communications

Rapid transmission via PBX, TWX, etc., to speed up the major U.S. Crop Reporting Board releases to the field offices in order that they may speed up local service is needed. Delays in mail service in many States handicap immediate releases to their constituents. We recommend a continuing study of this problem, and remedial action in the more distressed field offices at the earliest possible date. (See Work Group C report.)

H. Records Management

It is strongly suggested that the current instructions on the disposal of historic records be revised and updated. Some offices are utilizing ADP more and more. As a result, these offices are faced with holding and storing duplicate records, e.g., schedules plus IBM cards.

I. Work Measurement Units

A work measurement system for all elements of work that are unit identifiable and countable should be developed by SRS and MOS for use as a management aid in planning staff and financial requirements.

Personnel Management - W. I. Bair, Sub-Group Chairman

The area of personnel management has many facets. However, the Work Group report is limited to those problems most urgently in need of solution, simplification or clarification.

A. Recruitment

1. The Work Group recommends that MOS promptly provide a brief informative statement on the step-by-step procedure involved in processing a job candidate from time of interview to time of selection and appointment under the FSEE, Student Trainee, and Student Assistant examinations. Although the information is undoubtedly available in our files, many offices appear vague in regard to understanding just what to do next.

2. A brochure relating to professional careers in SRS is urgently needed as handouts to college students, faculty members, student advisers and placement officers. The recipients could then at least have something tangible after exploratory personal visits. MOS is urged to process an appropriate brochure as soon as the revised Civil Service standards are established. The brochure should indicate how to apply for the FSEE examination including the necessity of indicating the Agricultural Statistics option or alternative procedures if recruiting is permissive outside the FSEE series.

3. MOS should immediately advise the several offices that statisticians may, when eligible, be recruited at the GS-7 grade. A clarification of this fact seems in order from the Work Group discussion.

4. The merits of recruiting GS-7's outside the FSEE series were discussed at length. This could reduce the time lapse between candidates indicated interest and actual appointment. Also, the Work Group is of the opinion, the unassembled examination has more "appeal" to candidates with the required qualifying academic or work experience. It is recommended that this procedure be fully explored and adopted if feasible.

5. The managers of SRS are to be commended for providing in-service training in statistics through the correspondence course at the University of Florida and other advanced statistical training (Raleigh and Ames). In view of the new standards for Statisticians adopted by the Civil Service Commission, it is recommended that SRS complete arrangements with the Univeristy of Florida, (or other acceptable institutions) for correspondence courses which would provide new appointees with six additional semester hours of training in statistics (or equivalent) during their first three years of employment, if needed, and assure new appointees this

supplemental training will be provided with SRS paying the tuition. SRS should also give consideration to supplying the respective field offices with the required text books for loaning to the trainee while pursuing the required course work. This would be helpful to employee morale and would provide useful reference material in the office.

B. Student Trainee Program

The Work Group recommends that MOS provide a brochure for use in the SRS Student Trainee Program to supplement similar information for recruiting Statisticians. All State offices are urged to actively sell and promote the Student Trainee Program as it has an increasing essential place in the over-all recruiting program.

C. WAE Enumerators

With the increasing volume of enumerative surveys, many offices find the 130-day appointment too limiting. It is recommended that MOS explore the merits of securing some relief from this limitation by use of more days work per service year or possible use of total earnings. A look at enumerator needs in operational States, associated with the prospective needs as SRS conducts primary surveys for other agencies, should provide a guide as to a most appropriate limitation on this type of appointment within SRS needs and Civil Service demands.

D. Clerical Need

MOS is urged to work with the Civil Service Commission to see that appropriate registers are available. Recognition of the need for comptometer registers where field offices are located is essential.

E. Impact of ADP

There is need for general and specific information on ADP in the State offices to provide the staff with a general understanding of the system. SRS or MOS should get such information out as soon as possible including information as to various positions, brief description of duties, and approximate number of each.

F. Training

The group urges State office needs for management and supervisory training of professional staff members as well as training for supervisory clerks be considered by MOS to supplement this type of training now provided for Washington staff. Also continuation of training and periodic re-training for the State office administrative clerks would prove most helpful to keep abreast of changing procedures.

G. Job Classification

The Work Group commends the Administrator for recommending an upgrading of some offices. It also strongly urges that efforts be continued to upgrade additional field offices.

Employee Management Relations, Safety and Awards - T. J. Kuzelka, Sub-Group Chairman

Since directives implementing Executive Order No. 10988 are still being developed, and the level and areas of employee management negotiations are not yet defined, the group recommends that MOS continue to keep field offices informed on employee management cooperation in the federal service.

A. Equal Employment Opportunity

In recognition of the fact that the work of the Statistical Reporting Service is technical in nature and demands a high standard of performance, employment, training and advancement opportunities should be based on the ability and potential of the individual for the position under consideration without regard to race, sex, creed or color.

B. Safety

Managers at all levels are responsible for safety and must actively foster employee safety programs if such programs are to succeed. The group recommends accident reduction measures and training in safety as follows:

1. Increase office safety by (a) committee review of existing facilities to eliminate hazardous conditions, (b) a continuing program of safety training, and (c) committee investigations and reports on accidents.

2. Stimulate an awareness of safety in the field by (a) training in job accident prevention, and (b) providing first aid instruction and equipment. Safety training should be included in all enumerator schools.

3. Reduce automobile accidents by inaugurating defensive driver training.

4. Provide appropriate safety equipment in automobiles for official use; i.e., seat belts, chains, shovel, blanket, flashlight, fuses, etc.

To encourage this program, it is urged that (a) State statisticians explore local resources for training, (b) MOS publish, on a recurring basis, sources of training material and recommend training programs,

and (c) appropriate literature and forms for reporting accidents be furnished to all employees who are required to perform travel.

C. Incentive Awards

The Incentive Awards Program should be more vigorously implemented for major as well as for worthy minor contributions. Review of, and action on, recommendations should be made more promptly. To utilize these programs effectively, supervisors should make periodic review for eligible candidates.

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SECTION III

CONFERENCE EVALUATION

CONFERENCE EVALUATION

Evaluation Committee

W. Ward Henderson, Chairman
George D. Harrell
John J. Kaminski
J. E. Pallesen
Henry L. Rasor

Method of Evaluation

The Committee was asked to evaluate the Conference from the standpoint of subject matter coverage, facilities and other arrangements, and report on what was wrong and what went right. The evaluation was based on (1) questionnaires completed by conference participants, (2) general observations of conference participants, and (3) observations of Evaluation Committee members.

The report of the Evaluation Committee is broken into categories and reported by each of four Committee members. There has been no attempt to eliminate duplication or overlapping between the individual reports.

1. General Tone of Conference -- Henry L. Rasor

The Committee believes that this has been an outstanding conference, particularly in view of the weighty subjects to which we have been exposed. We observed throughout the entire conference an unusual atmosphere of seriousness on the part of those in attendance. This has truly been a working conference, and although we fumbled the ball on a number of occasions, everyone was willing, at least, to make an effort to carry the ball.

We have been made keenly aware of the import of forward looking plans which shall be put into operation post haste in SRS offices not only in Washington, but in the field as well. The magnitude of the problems we now face utterly defies the imagination of many of us and leaves us with a certain degree of frustration. As contrasted to other conferences of recent years, this one has been characterized by a subdued atmosphere -- one in which those of us on the firing line have been very attentive in our search for information and guidance which can filter down to us only from the top policy levels.

When this group becomes subdued, you may rest assured that we are thinking -- and thinking hard. Dr. Trelogan's conference theme-- "Statisticians in a Changing World"-- gave us ample cause to ponder not only in which direction we shall move, but of still more moment, "How fast are we going?"

We are deeply indebted to the policy makers for the roles they have played in making clear to us the direction they expect us to travel and the speed at which we shall travel. They have given us some very positive statements of policy upon which we may expect to operate, with a mandate to make immediate plans looking toward the implementation of their policy.

The challenge is awe-inspiring, but we are fully aware of the fact that at long last we are to be given the opportunity to "become of age" in our professional field as representatives of SRS.

We know without question that our charter has the backing of the man who represents us in his council with the Secretary. We know our Administrator is behind us and is pushing hard. We know his Deputy is "chomping at the bits" and full of steam. We know our Division Directors are fully capable of propelling us along the road with ever-increasing proficiency and momentum.

Never in the history of our organization has judicious planning been more necessary than it is today. This planning must not be limited to the next month or so, or to the next year, but must take into consideration our anticipated operations for years to come. They must be made with a high degree of precision, for that is one of the major impacts of ADP. At the same time, they must be sufficiently fluid to cope with the ever-changing pattern of American agriculture. We must go forward -- that is our charge.

Some members felt that for the first couple of days group participation was a bit too formal. That was perhaps due in considerable extent to the fact that during this period of time our top policy makers were laying it on the line in near-staggering dosages. It might also have been attributed in some degree to the fact that we were not yet sufficiently acquainted with the top boss. We know that he means business. We are leaving the conference with full confidence that, through our combined efforts, we shall eventually reach the goal he has set for us.

There were numerous expressions of our pleasure at having been afforded the opportunity of becoming better acquainted with the Management Operations Staff. Many of us knew some of them only by name, and it was heartening to learn that each one of them has our interest at heart. We shall need their constant help and we know they stand ready to come to our rescue.

As this conference comes to a close, we have the impression that everyone shall be preparing to leave Denver with the definite feeling that he has learned much from its proceedings. The discussions have been kept on a high plane. The tone of the conference was outstanding. We are so very thankful to those who made it so.

2. Subject Matter Coverage -- J. E. Pallesen

In evaluating something, it becomes immediately necessary that some criteria be established and ground rules laid down. We can ask ourselves two questions:

a. Was the content of the individual speeches and panel reports of genuine interest to the group?

b. Did the individual speakers get their message across in clear-cut and understandable language?

In evaluating subject matter, speeches, individuals, etc., it is always good practice to say nice things as well as to be critical!

The questionnaires filled out by participants were quite helpful; however, many made no mention of subject matter as such. Since we had this assignment before the meeting started, the Evaluation Committee had the opportunity of being very critical listeners of every presentation.

At the very outset of this meeting there should have been announced the recent personnel changes. Mr. Simpson as Deputy Administrator and Chairman of the CRB, Mr. Ewing as Director of Field Operations Division, Mr. Mullins' move to Florida, and the retirement of Newell, Reed, Townsend and Stevens.

The welcome and opening remarks were very appropriate and got the message across; particularly Dr. Trelogan's comment on purpose "To take a look at our work in its broadest perspective."

The formal speeches on Monday, Tuesday, and Wednesday mornings were generally very well presented and covered a rather wide range of topics from strong policy statements to Long-Range Planning. These talks were well planned and the speakers competent. There was a good distribution of "outside" speakers. Plans should have been made for a limited discussion following these formal speeches. Several participants commented, especially on the "Look Ahead," "Biloxi Results," "The Expanded Program" and the "ADP Task Group" speeches. The frankness on the part of our MOS people was admired. Our new "Boss" was the only one to use slides and then he presented administrative data that we have been sending in for years and years and not knowing why.

One participant commented that there was too much time spent on "goals" and not enough on current problems, but the majority enjoyed the "look ahead." Others commented that subjects in the management field, training program, research, market flow-type data and weaknesses of probability sampling were not adequately covered. In contrast, another reported that "clearing the air"

on probability sampling and mailed surveys was most helpful. The general concensus is that the subject matter assigned for panel discussion was good.

Work Group titles were puzzling but appropriate. A number of less erudite statisticians were afraid to pronounce these titles in public. There were several complaints about the tight schedule which did not leave enough time for adequate discussion of important subject matter. However, our committee feels that additional time probably would not have been spent profitably without a due date. We could have belabored these subjects for an extended period.

We should note that there was a good balance of Washington and field men on panel assignments. Discussions following panel reports were conducted at a high level. One statistician had the temerity to question the advantage of having work groups.

The Banquet was highlighted by hearing from Secretary Brannan, honoring the four retirees mentioned earlier and also Mr. Bier, and the presentation of awards to three employees. These retirements saddened the older guys, but were greatly encouraging for youngsters.

This committee believes that the subject matter content coverage was very adequate resulting in discussions and recommendations that will be extremely useful in meeting objectives. The theme of the conference, "Statisticians in a Changing World" was excellent.

3. Facilities -- George D. Harrell

The committee believes that the over-all facilities provided for the conduct of this conference should be rated excellent.

The first facility with which the arriving statistician came in contact was the Registration Desk. This facility was well placed, easy to find, and designed to facilitate the extraction of $8.50 plus $.50 from each arrival.

The individual rooms were exceptional. The committee has heard only praise for these accommodations. Room service was of the same high caliber.

The room provided for the general sessions held the group comfortably. The lighting was excellent and sufficient elbow room was provided at each table to prevent any feeling of being crowded. The padding on the chairs, although not of the easy chair type, was adequate and appreciated more and more as each hour passed.

After such a glowing appraisal of the over-all facilities, it seems inconsistent to follow with recommendations for improvement in certain areas. However, since the questionnaires completed by participants indicated improvement was desirable in some items, and since the purpose of conference evaluation reports is to improve the conduct of future conferences, we make the following observations:

a. We believe a telephone is not necessary in the general meeting room. However, if it is deemed necessary, incoming calls should be signaled by a light rather than a bell.

b. The engineering department of the hotel should have been provided with a schedule of meetings so that the public address system could be checked out and in working order prior to the opening of each general meeting. Fortunately, the acoustics of the room were such that the frequent failure of the P.A. system did not put too great a burden on the speaker to reach the back of the room.

c. Coffee breaks should be kept within announced limits. A sound signal should be provided to recall all participants back at the same time.

d. The catch of the lock on the door of the general meeting room should have been padded or otherwise muted to prevent the necessary comings and goings of certain conference personnel from disturbing the rest of the conference.

e. The meeting rooms for the Work Groups should be separated a sufficient distance so that deliberations of one Work Group do not disturb those of another Work Group. This was the case in this conference at the first meeting of the Work Groups. Although this matter was corrected promptly, the committee believes it should be mentioned in this evaluation report for the guidance of planners of future conferences.

f. Although stenographic help was adequate for the typing of a limited number of copies of committee reports, facilities should have been provided for the mimeographing or other means of duplication of reports so that each member could be provided with a copy of the report being presented. It is difficult to assimilate the contents of a report given orally and more difficult yet to refer back to a specific item which one may desire to discuss.

g. The committee wishes to compliment the Colorado office for their willing accomplishment of all the various man and girl Friday tasks they were asked to do.

4. Over-all Evaluation -- John J. Kaminski

Obviously, all the answers have not been worked out in this conference. There have been indications of weaknesses and strong points and possible suggestions which would be considered in the format of a future conference. In discussing these, it is my intention to speak first of the weaknesses, followed by the strong points, and then to suggest improvements which might be considered in the planning of a future conference.

Weaknesses

a. Overlapping in panel assignments (although to some extent, this may be considered a weakness, it could also be considered a strength in that a broader appraisal of the particular problem evolves.).

b. Consideration of smaller panels (this might also be considered a strength as smaller panels or smaller subcommittees were developed and all the panels are for specific consideration of a certain group of related problems.).

c. Lack of time for panels to complete recommendations.

d. Reading and considering of recommendations a section at a time (to a minor extent this procedure was followed by panels C and D.).

e. Too much material for time allowed.

f. Discontinuity of subject matter content (although programming the conference creates numerous problems, and although it is recognized that certain of these items probably could not have been scheduled any differently, the alignment should be such that the group would not be exposed to ADP and then the general policy discussion followed by civil defense, rural areas development, expanded program, and back to a phase of ADP, but that related subjects would generally be fairly close to each other.).

g. Slow return from breaks.

h. Speeches too close together. (This was offset, to some extent, by the suggestion of the speaker of a one-minute break so that the individuals could stretch and generally refresh themselves.)

i. Lack of ground rules for committee reporting.

Strength

a. Good planning of program.

b. Active and uninhibited participation.

c. Opportunity to meet new horses -- ADP and MOS.

d. Breaking of panels into small working committees.

e. Frankness of MOS representatives.

f. Quality and timeliness of speeches at General Sessions.

Improvements Suggested

a. Duplicate panel recommendations for General Assembly. (This was done by panel D.)

b. Set aside meeting room for discussion with Washington people.

c. Provide more time for preparation of recommendations.

d. Include a session with certain users of SRS data for their appraisal and experience.

e. Greater participation such as second men in State Offices.

f. Better definition of subject matter to reduce early rambling.

Although there may be other subjects, it is believed that these tend to highlight the more important ones.

SECTION IV

CLOSING COMMENTS

EARL E. HOUSEMAN

You will recall that the title of Dr. Trelogan's address was "To Acquire and Diffuse Useful Information." I want to add a footnote to this matter of acquiring and diffusing information. How is the spirit and knowledge of mathematical statistics diffused? I've been impressed, during the past 20 years as an applied mathematical statistician, by the fact that the most influential carriers of statistical philosophy into practice have usually been persons trained first in a subject matter field and secondly, in mathematical statistics; that is, persons who felt a need for improved statistical or research methods in their respective lines of work and as a result took time to acquire much relevant knowledge of mathematical statistics. In my opinion, such persons have generally been more influential in selling mathematical statistics to their colleagues than mathematical statisticians have been. I'll leave some of the implications of this to your imagination. However, with reference to the diffusion process, the situation is much better when the subject matter people -- the people who have need for improved statistical methodology-- are reaching out for it rather than when the mathematical statistician is pushing it.

Another observation that I would like to make on this matter of diffusion refers to the phase of a survey or experimental process when those who may be reluctant to change are most likely to accept and appreciate good statistical methods or principles. During the planning and collection phases, many aspects of a new approach may seem to involve added burdens or inconveniences that are not worth the extra work involved. It is during the latter phases of the survey or experimental process -- analysis, interpretation, and presentation of results -- when the merits of the mathematical statistician's recommendations are most likely to be understood and appreciated. As an illustration of this point, I recall a few times in which results of surveys have been subjected to considerable controversy in hearings. In such a situation, there is nothing quite so comforting as having the testimony for the defense of survey findings cite the use of practices that yield estimates with a known degree of precision.

One final point. A considerable amount of emphasis in this conference has been placed on probability sampling, and the initial phases of designing a survey. Work Group reports relating to this subject recognize this as an essential ingredient to meeting certain technical objectives and goals that have been set. It seems to me that the emphasis in the next conference of this type should shift to the treatment of data; that is, methods of estimation, editing, adjustment for non-response, etc.

GLENN D. SIMPSON

Mr. Chairman and fellow statisticians: My remarks will be very random, but I hope not too disconnected. I have tried to evaluate this conference somewhat in relation to the Biloxi Conference held a year ago. At the conclusion of the conference in Biloxi, we judged it to be the best one up to that point. I am now inclined to think that this one in Denver is far better. At Biloxi we made a lot of brave statements, but midway in that conference, as you will recall, SRS came into being by issuance of a notice from the Secretary's office. At Biloxi we didn't know for sure what SRS was, who was to be included, or what its mission was going to be. In this setting, our statements at Biloxi had comparatively little framework on which to hang. Here at Denver I now believe we have this framework, and it is definite and very strong. Several of the important recommendations made at Biloxi are included in the recommendations derived from this meeting, but they seem much more meaningful now than they were a year ago.

At this point, I'm going to take the liberty to talk about the future of the organization in the terms of its people, and not in the terms of program goals. We can describe goals and draw up organization charts of all kinds, good and bad, but it takes people to achieve the goals, and it takes people to make the organization work. We can have a poor organization, but good people can still make it operate effectively. I'm going to talk about only two individuals, but I believe these two are essential to achieving the goals of this organization.

The first is Earl Houseman. When I was assigned to work at Ames in 1940, Earl was a graduate student just finishing up his academic work. We collaborated on a project that had considerable bearing on the statistical formula he was putting on the board the other day. I had been working in New York where we drew hundreds of repetitive samples of farms from aerial photos designed to show the normal distribution of the sample averages around the true mean. Earl told me the other night that we didn't have all of the necessary statistical theory on this subject back in 1940. On that New York staff we had an employee named Henry Goldberg, who was severely afflicted with spastic paralysis. He could barely talk or write, but he had studied statistics and mathematics all his adult life. After about a year of very painful endeavor, Henry worked out some significant fundamental research that was sent to Ames and which turned out to be the basis for the distribution of the ratio which the Ames staff, including Earl, turned into the statistical theory that he presented the other day. Someone said earlier that Earl is somewhat like Calvin Coolidge, and he may be right in part. Earl is generally quiet, but I classify him as a "dreamer" in a number of respects. In your contacts with Earl, you'll find him making statements that may startle you, but he is looking at the future and will attempt to stimulate you into thinking ahead in the same manner. At the same time, he can and will critically evaluate current problems. I feel that each of us in this room should visit with Earl at every opportunity -- you will find him a challenge, and the organization needs its "dreamer."

Next, I want to talk about Dick Smith. I have associated very closely with Dick for more than 10 years -- part of the time we worked side by side and at one time I worked under his direction. I found out early that when I did my "homework" properly, I never had any problems with Dick. Many of us classify Dick as a "conservative," which I do, but with his great program knowledge he has frequently kept me from falling into situations that would have proved embarrassing. Still another observation appears to be in order. We have had reference at this and other conferences to some of the great minds that have blessed our Service in the past, such as Sarle, Becker, Harlan, and Shepherd. These people are recognized as having made significant intellectual contributions to the crop reporting service. I will add Dick to this list, and by doing so the group will be upgraded. Therefore, it seems to me we need the "dreamer" and we need the intelligent "conservative," and we cannot afford to lose either.

As we move down the road with the positive leadership of Dr. Trelogan and the able and high level intelligence of Dick and Earl, we cannot do anything but succeed. I have heard people point with pride to the Census Bureau and its assembly of talent in the statistical/mathematical field, but I feel quite certain, Earl, with your direction, plus our training programs, it will not be long before the Statistical Reporting Service will be an Agency with equally great technical stature.

With these few remarks, let me say that I have enjoyed this conference, and hope you each arrive home safely and that we see each other again quite soon.

JOE A. EWING

Mr. Chairman, fellow workers in SRS: I'm hardly in Illinois and I'm not in Washington. Now where does that put me? Maybe not where you think. I thought about that too. Maybe it's the twilight zone. Anyway, I'm beginning to have now a little better appreciation of Abraham Lincoln's feelings a little over a hundred years ago when he left Springfield for Washington. What worries me just a little bit is what happened to him.

Speaking of statisticians, and their ability as forecasters, I want to mention an observation made by Dick Smith in the autograph album given me when I left Washington for Illinois in 1948. He probably has forgotten it. Anyway, he wrote, "You better be careful or you'll be back in Washington again because you've been here twice, so there are two strikes against you." I didn't, of course, think that anything like that would happen, but you never know. I also remember when Roy Jennings came out here to Denver. Roy had also written in that little book, "Joe, I hope I don't have to move you again." He tells me he won't either, because "It's going to be Bill Evans' job." I wonder, of course, how you folks feel about my going to Washington. You probably wonder how I feel. There's been a little dreaming along the line. Sam Gilbert had a little dream which he told me. Sam dreamed that he suddenly woke up

and there I was looking over his shoulder saying, "Sam, you better be a little more punctual. You haven't been getting to work until 8:30." I haven't told him yet, but I also had a dream, Sam, after you told me that one.

One of those elusive things, but Sam and I had a job to do. It must have been a report of some kind because I remember it was quite long and quite thick -- a bunch of papers. We put them together, and I suppose that indicates working together and a little cooperation and Sam, I know that dream is going to come true, but I hope that other one doesn't.

I'm on the same team you folks are. My thinking now is with the field people, but we're all civil servants; so it's SRS all the way. I know from my own experience that the power of an automobile comes from the motor and not from the driver. I feel lucky about this move -- like the young baker who decided one day that he could give better service to his people if he would slice the bread rather than sell it to them in a whole loaf just as everybody else was doing. So he tried it and the people wanted more. So much more, in fact, that he couldn't keep it sliced with that little knife of his. He found a bigger knife and sliced two loaves at a time. He still couldn't keep up with the demand. He had to shop around for these tools -- we've been talking about these tools, you know -- he had to shop around and finally he found an old sword that had pretty good material in it and he could slice three loaves at a time. He still couldn't quite fill the demand. He had a small table which would hold just four loaves and he just knew he wouldn't be satisfied until he could find a knife that would slice four loaves at a time. He did a lot of searching. He got discouraged. He thought he would never find anything like that. He carried a little tape measure with him and when he saw something which he thought would just about do the job, he would measure it. Finally, he found it -- an old meat cleaver in a butcher shop. He bought the thing, and going down the street whistling, he met a friend of his who said, "What makes you so happy?" He replied, "I'm the luckiest man in the world today. I've just found a four loaf cleaver."

Now, I've just one suggestion. Let's tell the home folks about this conference when we get back to let them in on the proceedings, because they want to know about it. Thank you very much.

R. K. SMITH

Well, in this spot I envy Earl Houseman. He was up here before all those kind remarks passed out by Mr. Simpson. However, I do want to express my appreciation to Glenn. He and I, as he said, have worked very closely together for at least 10 years. We've had relatively few differences and I appreciate his abilities and his interests in the organization fully as much as he appreciates mine. And I want to assure him I'm sure we can work together in the future just as well as we have in the past. As far as Joe Ewing is concerned, I don't know. The last two times Joe Ewing

came to Washington I was responsible for his move. This time, I didn't have very much to do with it. So, there's a little question mark as to responsibility here. But I am sure we all can work with Joe. I want to make this reservation though: We will try to keep him straight and following the field office viewpoint, but if he kind of gets off the track at times, don't blame me. I'm sure this won't happen.

Joe, we welcome you again to the Washington fraternity. As a matter of fact, I'm not sure but what I had a little bit to do with Joe coming into the organization to begin with. I believe I gave him his first interview before he came into the Service. We had a fine time together in the Illinois office working those long hours with Mr. Surratt. We went back to the office practically every night and on Sundays, (we worked a free day on Saturdays then) and his assistants were expected to do the same. By the time I moved to Washington, we got Sundays and a few nights off. By the time Joe was transferred, they had it down to only two or three nights a week. Working in that office with Andy Surratt, having the advantage of his experience and advice, is something I am ever thankful for. I wish more could have had the experience.

Now, with regard to this conference. There isn't very much I can say after the report of the Evaluation Committee. Perhaps all of our desires -- when I say our, I'm including all of you -- perhaps all of our desires and our ideas have not been met. But I certainly have to agree with the Evaluation Committee that this rates as a very successful conference. And as Glenn indicated, I can't help but compare this with Biloxi. The Biloxi Conference was planned in a different setting. The setting at Biloxi was a deliberate attempt to get ideas and recommendations from the field statisticians because we very definitely felt the need of an opportunity to bring together their ideas, suggestions, and recommendations. All we from the Washington office were doing there -- the Division Director at that time and his Deputies and the Branch Chiefs -- all we were trying to do was set a framework and provide source material reference. This conference was organized entirely different. It was planned as a conference for the whole of SRS. It was supposed to cover the interests of the whole organization. And, as a result of this, the Washington personnel took a much more active part. I mention this because there have been a number of remarks that have come to me about the difference in this conference and the one at Biloxi, and there may be a feeling on the part of some that they didn't have as great a part here as they did there. Both of these conferences have served the purpose of providing future guidelines. It has been interesting, as Glenn mentioned, to note that many of the recommendations made at that conference still apply and have been repeated here. A number of them have also been modified and in addition, we have reached out much farther into the future.

We now have these long-range goals for the whole of SRS. Some may be fulfilled relatively soon; others may take years. But I want to leave you with this thought in mind: As we go forward from day to day, meeting the pressing needs for service -- for which the organization has a

fine and generally well recognized record -- we must keep these goals in sight and work toward their accomplishment. We have a fine Service, but we must always strive to do a better job with the facilities at our command. This is the message I want to leave with everyone. Thank you.

CHARLES F. KIEFER

Mr. Chairman, my closing remarks will be brief. I want to make it clear again that MOS stands prepared to be "on tap, not on top." We wish to be considered not as experts either, because you know an expert is a consultant. A consultant is a man who can tell you how to go wrong with confidence. Moreover, he is also a person who sometimes brushes aside the trivial and ignores the details as he sweeps on to the grand fallacy.

It's been a real pleasure for me to have been here. My associates and I really appreciate the opportunity to meet each of you, to have participated in your deliberations and in your panels, sharing your laughs, and your problems. I am particularly glad that we had our friends from the Budget Bureau, including Mr. Cliff Parker, become associated here with deeper and broader understanding of not only the goals but the procedures and the problems we in SRS and MOS are working on. I am sure that each of you can see more clearly the importance of not only a well-rounded agency program, but also a well-rounded State program. In the event any of you have committed your total Federal and State program to writing, I would appreciate it if you would send it in to me. This will advance my education considerably and help us all.

In the general field of management, I was pleased to see the State agricultural statisticians in charge carry the ball; particularly on Work Group D. This is as it should be and as it must be today and tomorrow. I hope you will continue to plan your management efforts, including supervisory and employee development even more effectively. We have tried in a small way at this meeting to give you some indication of what we believe is expected of us in the Department and from the SRS Administrator.

I would hope that in the weeks that lie ahead you would think more definitely about the three most important things from your personal professional viewpoint that MOS can do, in cooperation with Joe Ewing in the Field Operations Division next fiscal year to advance the work program and the management program in your State. I would like to hear from each of you men in charge on this on or before June 1, 1962. We need to have a total SRS management program, a total management philosophy and we need to have this committed to writing, and to have your ideas in the process. We intend to work closely in the future with Dr. Trelogan and Glenn Simpson, Joe Ewing, Dick Smith and Earl Houseman, and with you. Most particularly, I must say, there is a real need for a careful and cooperative review of the SRS work measurement system. There is fresh ground to be plowed to our mutual advantage. Nor can I exaggerate the importance of preparing yourselves for ADP.

I congratulate you on your new leadership, Dr. Trelogan and Mr. Simpson. We in MOS like them, we respect them, and we support them. And in this new leadership each of you have a real opportunity to communicate freely with them on the things that matter. We need to improve our total field office visit operation and our understanding and support of field offices. This is essential whether the on-going operation in the field is smooth or rough.

In closing, I want to thank you for your friendliness, your candor, and your cordiality. It's not too easy to join this outfit, but I feel you've put out the welcome sign to us, and as we see it more clearly, we're going to respond. Agricultural Economics is both on the map and on the move again, and we in MOS, my friends, will continue to do our best. It's been a pleasure to be with you.

HARRY C. TRELOGAN

In discussions preparatory to this meeting, I was warned to anticipate considerable guff about the degree of authority different people have in their respective positions in State offices and in Washington. So I have endeavored to ascertain, in my mind at least, where one might find the most authority in the organization. The observations have led to the conclusion that today the men who can speak most authoritatively in this organization are Mr. Stevens and Mr. Townsend. So I would like to ask each of them to come and visit with us a few minutes before we depart.

C. D. STEVENS

Only a few minutes ago Dr. Trelogan suggested that I might like to reminisce for a few minutes inasmuch as this will undoubtedly be a last opportunity, in view of my planned retirement in June with about forty years service with crop estimates. While I have a long established habit of listening in preference to talking or telling stories, I will try to break that habit for a few minutes. I first attended a Crop Estimates Conference in Indianapolis in the early twenties. This conference is using the slogan "Statisticians in a Changing World," as if it were new. Looking back over forty years "change" is the one thing that has always been with us. Looking back, changes seem small while looking ahead they appear large. This is merely a matter of the point of view.

Now to reminisce a little. I would like to remind you all of what, in my opinion, is the most important function of agricultural statistics; namely, "to service the marketing process." This aspect is not emphasized so much today, but is still very real as any statistician who works directly with growers and marketing agencies knows very well. The importance of this phase was impressed on me in the twenties by an incident which I will relate as a story.

In developing contacts in the Aroostook potato area, I visited the office in Houlton, Maine, of one of the larger potato growers and shippers. He

grew perhaps 300 acres and shipped over 500 cars of potatoes annually. In his office with him on that rainy morning were four or five growers and shippers discussing a subject which might be heard today in any potato area; namely, "No money in the potato business." I was introduced in a fashion which was barely tolerant rather than friendly and remained to listen in hope of picking up information which would be of value to me in preparing the next Maine potato crop estimate. In a few minutes I was a little startled by a statement from the leading potato shipper that the trouble with the potato business could be covered briefly by one statement, and I quote: "The farmers know too damned much." My curiosity aroused, I pressed for an explanation and got this terse reply. "Between the Market News Service at Presque Isle and your crop reports, the farmers know more about the potato business than we do." I may have omitted some of the emphatic adjectives of his original statement. The service of crop reports to the marketing process from the point of view of the farmer seems quite clear.

Another story from one of the earlier control programs will, perhaps, have points of interest to statists who started in the mid-thirties, such as Glenn Simpson, as Corn-Hoggers. When the corn-hog program started, New England was written off as a minor matter even though statisticians were being hired in numbers unprecedented before or since, I believe.

As the program developed, a county close to Boston presented us with a hundred contracts covering so-called garbage hog farms, calling for payments amounting to about a half million dollars. After a careful checking and screening of evidence, the group of contracts were completed and transmitted to Washington. Immediate repercussions followed.

First by telephone - Mr. Charles Harlan, Head of the Livestock Branch, insisting that such contracts could not be factual, etc. This was followed next day by a personal visit to Boston by Mr. Harlan, still very sceptical of the existence of the hogs as only Mr. Harlan, with his western beef cattle, hog background could be. A checking of evidence in the office seemed to have no more effect than water on a duck's back. Finally, I suggested that Mr. Harlan visit some of the places, the trip to be made by Mr. Harlan accompanied by Robert Walsh, who is still with the Department, and was then assisting me with the program at Boston. Transportation was to be provided by the County Committee Chairmen -- Lincoln car and all -- with the trip ending at my home for dinner.

The trip was carried off as scheduled on a pleasant June afternoon, and in due time Mr. Harlan appeared at my home for dinner, volunteering no comment about the hog farm problem. After dinner, and still no comment. A walk after dinner and still no comment. Finally, I forced the issue only to receive the terse reply, "Do I smell like those places?" I replied, "Of course not." And the walk continued with no discussion of the problem of how many pigs. Again I forced the issue with this direct question, "What do you think now about the contracts?" Another brief silence and then this short statement. "They had the pigs and they have

been cut plenty." No more was said concerning the matter, and Mr. Harlan took the sleeper to Washington that night. What happened when the Boston newspapers discovered that 100 garbage hog farmers were being paid a half million dollars by the government is another story.

Many other stories of this nature could be told, but perhaps these two will suffice. Facing up to the idea of retiring, I find a feeling of loss dominant. Closing the book on the activities of a lifetime is difficult. The last few months have given me a new and keener appreciation of my many friends in crop estimates and in the agricultural industry of New England. Looking ahead, the growth and progress of SRS depends on maintaining a spirit of cooperation and working together. Difficult programs can be mastered if approached from the point of view of working it out, giving consideration to all aspects. Problems are never satisfactorily solved by insistence on an absolute right or that one procedure can satisfy all areas. I am sure that SRS, under present leadership, can look forward to a future marked by the spirit of working together.

J. C. TOWNSEND, JR.

I would be amiss if I did not express my appreciation to all members of the Statistical Reporting Service for the long period of friendly association. I have enjoyed my work terrifically with the organization, and have derived considerable satisfaction in that we have been able to accomplish some measure of success.

The general theme of the conference, "Statisticians in a Changing World," and the setting up of goals to be reached by the organization are not new to us in Florida. Florida's agriculture has always been highly commercialized and specialized. We recognized this fact many years ago, and in our efforts to serve the State's agriculture, we have had to devise many means of accomplishing this goal. It required very close cooperation with members of the industry and other governmental service organizations. The need for more and better cooperation actually started in the days of OPA when, by close cooperation with the vegetable industry, we were in a position to furnish them with up-to-the-minute information on crop losses, thereby enabling the growers to get quick adjustments in price ceilings.

The industry was quick to see that the further development of the crop estimates office was highly desirable and through the efforts of Mr. Owens of our office and Mr. Lamont Graw of the Florida Fruit and Vegetable Association, a legislative program was developed whereby personnel and funds were given to the Florida Experiment Station. This began in 1947. A couple of years later further help was secured. Through legislative help, additional personnel for vegetables and citrus was secured. In the meantime, the citrus industry, realizing its need for more accurate forecasts, gave us help through the Growers Administrative Committee and personnel was assigned to this office and paid by that committee.

Bruce Kelly came on the scene about that time and set up objective models for crop forecasting and funds were secured on a matching basis to enlarge upon this program. During this period, Federal personnel and funds remained practically static. These points are brought out mainly to show that with the proper prospective and goal in mind, a great many programs can be worked out in cooperation with other agencies and within industry groups. Of course, these things do not just happen. It takes a great deal of personal contact and building up of confidence in the Crop Reporting Service. The direct result of this type of operation over the past five or six years has been the pre-season forecasts of citrus production each year to such an accurate degree as to be somewhat fantastic. The citrus industry was so pleased that in the last Legislature they passed an assessment which very confortably finances this work. As I said before, these things don't "just happen." It takes considerable vision on the part of the statistician and the staff. It is necessary to think a little ahead of industry groups and be prepared to furnish answers to their questions that may come up at a future date.

We make it a point to watch the development of our new varieties of citrus so that we may be prepared to furnish growers information when the need arises for the current production estimates. One must be on the alert to consider the factors that might arise that would affect prices of the grower's product. A case in mind was that of the change in method of buying from a box basis to pounds solid which in effect is a price for the internal quality of the fruit. Florida processes nearly 70 percent of its orange crop. Therefore, any information that could be developed on the development of internal quality over a period of time could furnish very valuable information on the final price that the grower might receive for his fruit. With this thought in mind, we have begun testing fruit each month in the same manner in which we size the oranges each month to record the growth. By this type of research, we hope to be in a position to have information on the internal development as well as sizing.

This year, through an AMA Matching Fund with the Commissioner of Agriculture furnishing the State portion, we have embarked upon an accelerated livestock and poultry information program. Outstanding among the highlights of this program is the fact that we tying in the various service organizations such as the Market News Service, Extension Service, and Experiment Station, with each contributing toward the assembling of all pertinent information now available in several forms to the livestock and poultry growers. It is very difficult for the average grower to distinguish between the various governmental agencies and we, as public servants, have a distinct responsibility to see that this information is assembled and given to the grower in usable form. The foundation work on this project began several years ago when the Florida Poultry Inspection Service, Market News Service on Poultry and Eggs, the poultry specialists at the University of Florida, and this office, combined efforts to secure information on the laying flocks in the four marketing areas of the State. From this survey, it developed that the county estimates on layers and egg production were not keeping up with

the increases and were about 25 percent low. This effort proved so successful that immediately the dairy and the beef people wanted similar-type information, and through the diligent efforts of Mr. Rowe of our office, a program was started last spring. I will state again, these things don't "just happen." It took weeks and months of Mr. Rowe's time attending meetings with various industry committees, etc., before the program got underway.

So much for the State part of the program. As far as the Federal program is concerned, it has been the general philosophy that Federal funds took care of the State estimates and State funds would cover any further details that might be desired. I think we should re-examine the Federal policy. A compilation of county or area estimates certainly strengthens the State figures and in these days of high commercialization, the use of county or area data is in no way limited to State users. I have been impressed by the goals set up by the Statistical Reporting Service to serve the needs of agriculture in the United States. I have been impressed by the great expansion of the national program on area sampling. I have also been impressed by the suggestions that we provide a measure of accuracy in all of our estimates. I have been disappointed, however, that the highly commercialized States have been given so little part in the program. I can read that there is some hope in the far distant future. However, sitting on the home front and hearing the continued cries for more information from the specialized groups, I feel that we in the Statistical Reporting Service are missing a bet and are not serving a very important segment of agriculture. We are placing most of the responsibility for the development in these fields on the State statistician to promote and devise methods of operations that sometimes fall far short of the actual need.

Our goal in the State of Florida has been to provide information where there was a need. We were not particularly interested in the methods by which this information was secured. We regard the new tools of objective and probability sampling merely as other tools to get answers. The statistical problems in each State should be analyzed with respect to the best methods of securing such information and steps should be taken to proceed along these lines. We must recognize the fact that in the vegetable field there is a strong tendency toward solving the marketing problems through marketing agreements, State or Federal, and that the basic fact still exists that the problem of supply can be solved only through market-flow type of information. We in the Statistical Reporting Service should be doing research in preparation for such demands. We need to know how the plants grow (in time) in order that we may determine supplies for short periods of time which is the final answer in an attempt to solve the marketing problem. This type of information is not limited to fruits and vegetables. It is true, of course, in livestock and poultry items. We are, even now, getting requests from growers of foliage plants who are entering into a period of over-production and would like for us to collect information on the setting of cuttings by weeks, in order that in 8 or 9 weeks time they will know what their supplies will be and may thus attempt a solution of their marketing problem.

We were told by our Director to think "big" and we have discussed the role of the statistician in a changing world. To me, the challenge has been here for some time. And it pleases me to see that the organization is recognizing it. It is encouraging to note, as I leave the organization, that some consideration is being given to these problems. I am particularly encouraged by the ambitions and thinking of the younger statisticians. If we, the older men in the service, give them proper guidance, I have no doubt in my mind that they will meet these challenges and solve these problems.

HARRY C. TRELOGAN

Thank you very much Steve and Charlie. You have spoken well, giving us the benefit of authority based on experience. You have set excellent examples of men who have heeded a prayer called to my attention by Roger Hale. Allow me to repeat it.

"A Prayer for the Middle Aged

> Lord, thou knowest better than I know myself that I am growing older and will someday be old. Keep me from the fatal habit of thinking I must say something on every subject and on every occasion. Release me from craving to straighten out everybody's affairs. Make me thoughtful but not moody; helpful but not bossy. (With my vast store of wisdom, it seems a pity not to use it all, but thou knowest, Lord, that I want a few friends at the end.)
>
> Keep my mind free from the recital of endless details; give me wings to get to the point. Seal my lips on my aches and pains. They are increasing, and love of rehearsing them is becoming sweeter as the years go by. I dare not ask grace enough to enjoy the tales of other's pains, but help me to endure them with patience.
>
> I dare not ask for improved memory, but for a growing humility and less cocksureness when my memory seems to clash with the memories of others. Teach me the glorious lesson that occasionally I may be mistaken.
>
> Keep me reasonably sweet; I do not want to be a saint -- some of them are so hard to live with -- but a sour old person is one of the crowning works of the devil. Give me the ability to see good things in unexpected places and talents in unexpected people. Give me the grace to tell them so. AMEN!"

At the other end of the range of authority I have endeavored to ascertain the person exercising the least. A good candidate is the man who has just

joined our Conference -- the man who has charge of the electronic data computer. With your permission, I shall award this plaque to Dr. Vessie H. Nicholson, who diligently and conscientiously sees to it that the machine is working in our Service both day and night.

In winding up the Conference, a few observations on its characteristics may be in order. This has proved to be a working Conference in the truest sense of the word. There has been wide participation throughout. The formal presentations have ranged from very good to excellent. To be sure, some of the information imparted was bitter to take, but nevertheless well stated. The information was intended to help each of us see a total picture and how each can help to clear it up.

Doubtless, many share my regret that none of us has the ability to join all four discussion groups. One has to stay with a single group to get the most from it. Brief exposure to a group gives a distorted view to the visitor and is disturbing to the discussion.

Printed reports are often poor reflections of the caliber of discussion conducted by a group. Nevertheless, they are useful in conveying to others the sense of the discussions. They are even more useful to the participants as notes to help them recall what was said. Points will come back to you again and again; each time with deeper meaning, and possibly somewhat different interpretations than those originally conceived.

As we reflect back upon the discussions, it is well to keep in mind that they were conducted on a purely objective basis. Even the most vociferous and animated statements were free of personal or subjective implications regardless of how sharp, critical, or cynical the intonations. From these vigorous discussions as well as from formally presented papers ideas have evolved both big and little. The ideas you have acquired and you take with you are a measure of the success of the Conference.

The Conference has provided me with ideas about ways and means to help you do a better job. It has encouraged me in the belief that you are able and willing to join in facing up to difficult problems ahead. The Conference has done nothing to shake my confidence in the staff of the Statistical Reporting Service.

The Conference has accomplished the mission of advancing communications among SRS staff members. We may extend it further by imparting to our associates at home information about what transpired here.

In unison there is strength. We have gained a measure of that strength. May it grow and prosper. Let us leave with greater determination to play our respective parts on a team that is destined to give a good account of SRS statisticians in a changing world.

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SECTION V

BANQUET

CITATION

THE BANQUET

The Social Hour and Banquet on Wednesday evening, March 28, afforded several highlights. Les Hoffman, Toastmaster, kept the proceedings moving at a fast pace throughout the meeting. Seated at the head table were:

Secretary and Mrs. Charles F. Brannan
Mr. and Mrs. Paul W. Swisher
Mr. and Mrs. Floyd K. Reed
Mr. and Mrs. Lester J. Hoffman
Dr. Harry C. Trelogan
Mr. S. R. Newell
Mr. C. D. Stevens
Mr. J. C. Townsend, Jr.

Secretary Brannan delivered the Banquet address. Directing his remarks primarily to those in attendance who would soon be retiring, Mr. Brannan observed that in our modern and advanced society, retirement is becoming more and more an event which we should all look forward to with anticipation. He also commended those employees who received honor awards for a job well done. Mr. Brannan's recollection of events while he was Secretary, and particularly those involving his close relationship with the Crop Reporting Board, were enjoyed by all.

Retirees, or soon-to-be retirees, honored at the Banquet --

Sterling R. Newell
Floyd K. Reed
J. C. Townsend, Jr.
C. D. Stevens

Honor Award recipients --

C. D. Stevens
George D. Harrell
Carrol D. Spencer
Clara Buhler (Presented to Clarence E. White)

Entertainment during the evening was provided by Dick Grant and his music makers (Grant, Larsen, Kuzelka and Baker), and Sam Gilbert and Company.

The following citation was unanimously adopted for inclusion in the conference report:

C I T A T I O N

TO: Our Hostess, Margaret Husband

and

Our Very Special Assistant, Paul Lujan

"Our gratitude for outstanding service on any and all occasions, and particularly for typing services to meet tight deadlines under very trying circumstances. The high degree of cooperativeness was indeed appreciated by -- everyone in attendance."

SECTION VI

CONFERENCE PARTICIPANTS

PARTICIPANTS

Name	Division or Agency	Work Group	Headquarters
Ash, Joseph A.	MOS	D	Washington, D. C.
Bair, William I.	FO	D	Albany, N. Y.
Baker, John C.	MOS	C	Washington, D. C.
Bormuth, W. D.	AES	B	Washington, D. C.
Borum, Cecil J.	FO	C	Lansing, Mich.
Boster, Dewey O.	FO	D	Harrisburg, Pa.
Brittain, Alfred C.	FO	B	Columbia, Mo.
Brooks, Emerson M.	FO	D	Washington, D. C.
Buhl, John M.	OA	C	Washington, D. C.
Burkhead, Charles E.	AES	A	Washington, D. C.
Butler, Gordon G.	AES	A	Washington, D. C.
Callaway, Robert P.	AMS	C	Washington, D. C.
Caparoon, Clarence D.	FO	C	Madison, Wisc.
Cochrane, Willard W.	SEC		Washington, D. C.
Converse, Ray B.	FO	A	Jackson, Miss.
Dexter, Wayne V.	MOS	C	Washington, D. C.
Dorick, Stanley J.	MOS	D	Washington, D. C.
Evans, William H.	FO	D	Washington, D. C.
Ewing, Joseph A.	FO	A	Springfield, Ill.
Findlay, Joseph P.	MOS	D	Washington, D. C.
Frost, Oakley M.	AES	A	Washington, D. C.
Gallagher, Charles G.	SR	D	Washington, D. C.
Gilbert, Samuel J.	FO	C	Des Moines, Iowa

Name	Division or Agency	Work Group	Headquarters
Potas, Roy	FO	D	Sioux Falls, S. D.
Pownall, Paul C.	FO	C	Palmer, Alaska
Rasor, Henry L.	FO	B	Raleigh, N. Car.
Rolf, Floyd E.	FO	A	Phoenix, Ariz.
Simpson, Glenn D.	FO		Washington, D. C.
Sims, Clifford	FO	B	Columbia, S. Car.
Smith, Paul W.	AES	C	Washington, D. C.
Smith, R. K.	AES		Washington, D. C.
Stauber, B. Ralph	AES		Washington, D. C.
Stevens, Chester D.	FO	A	Boston, Mass.
Straszheim, Robert E.	FO	B	W. Lafayette, Ind.
Strong, George B.	FO	B	Montgomery, Ala.
Stuart, Thomas L.	FO	A	Richmond, Va.
Suter, Glenn W.	SR	B	Washington, D. C.
Sutherland, Roger H.	FO	C	Las Cruces, N.Mex.
Swisher, Paul W. Commissioner	Colo. Dept. of Agriculture		Denver, Colo.
Townsend, J. Charles	FO	A	Orlando, Fla.
Trelogan, Harry C.	OA	A	Washington, D. C.
Wallin, Lyman W.	AES	D	Chicago, Ill.
Wallrabenstein, Paul P.	FO	A	Honolulu, Hawaii
Walters, Herbert M.	FO	D	Trenton, N. J.
White, Clarence E.	FO	D	Boise, Idaho
Wilcox, Emery C.	FO	A	Seattle, Wash.
Wissinger, Ira E.	AES	C	Washington, D. C.